

**United States Department of the Interior
Bureau of Land Management**

**Environmental Assessment
DOI-BLM-UT-Y010-2016-0078-EA**

June 2016

Monument Wash Allotment Ten Year Grazing Permit Renewal

Location: Grand County, Utah

Grazing Authorization Number: 4306376

U.S. Department of the Interior
Bureau of Land Management
Moab Field Office
82 East Dogwood
Moab, Utah 84532
435-259-2100



Monument Wash Allotment Ten Year Permit Renewal

DOI-BLM-UT-Y010-2016-0078-EA

Table of Contents

1.0 PURPOSE & NEED	1
1.1 INTRODUCTION	1
1.2 BACKGROUND	1
1.3 NEED FOR THE PROPOSED ACTION	2
1.4 PURPOSE(S) OF THE PROPOSED ACTION.....	2
1.5 DECISION TO BE MADE	2
1.6 CONFORMANCE WITH BLM LAND USE PLAN	2
1.7 RELATIONSHIP TO STATUTES, REGULATIONS, OR OTHER PLANS	3
1.8 IDENTIFICATION OF ISSUES	5
1.8.1 Livestock Grazing	5
1.8.2 Vegetation:.....	5
1.8.3 Wildlife (Migratory Birds, Sensitive Species, Fish and Wildlife Excluding USFW Designated Species).....	6
1.8.4 Utah BLM Sensitive Species:	6
1.8.5 Soils:	6
1.9 ISSUES CONSIDERED BUT NOT CARRIED FORWARD FOR ANALYSIS	6
1.10 SUMMARY.....	6
2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION.....	6
2.1 INTRODUCTION	6
2.2 ALTERNATIVE A – PROPOSED ACTION	7
2.2.1 Terms and Conditions	9
2.3 ALTERNATIVE B – CHANGE THE SEASON OF USE TO ELIMINATE SPRING GRAZING	10
2.3.1 Terms and Conditions	10
2.4 ALTERNATIVE C – NO ACTION	10
2.4.1 Terms and Conditions	10
2.5 ALTERNATIVE CONSIDERED, BUT ELIMINATED FROM FURTHER ANALYSIS:	11
2.5.1 Increase the Authorized AUMs on the Monument Wash Allotment (Externally generated from scoping comments received by The State of Utah, Office of the Governor).	11
2.5.2 Convert the Monument Wash Allotment to a Common Use Allotment with Cattle and Sheep (Externally generated from scoping comments received by The State of Utah, Office of the Governor).....	11
2.5.3 No Grazing.....	11
3.0 AFFECTED ENVIRONMENT	11

3.1 INTRODUCTION.....	11
3.2 GENERAL SETTING	12
3.3 ISSUES BROUGHT FORWARD FOR ANALYSIS	13
3.3.1 Livestock Grazing	13
3.3.2 Vegetation	13
3.3.3 Wildlife (Migratory Birds, Sensitive Species, Fish and Wildlife Excluding USFW Designated Species).....	20
3.3.4 Utah BLM Sensitive Plant Species.....	25
3.3.5 Soils.....	27
4.0 ENVIRONMENTAL IMPACTS.....	28
4.1 INTRODUCTION.....	28
4.2.1 Alternative A – Proposed Action	29
4.2.1.1 Livestock Grazing.....	29
4.2.1.2 Vegetation	30
4.2.1.3 Wildlife (Migratory Birds, Sensitive Species, Fish and Wildlife	31
4.2.1.4 Utah BLM Sensitive Plant Species	36
4.2.1.5 Soils.....	36
4.2.1.6 Mitigation Measures	38
4.2.1.7 Monitoring and/or Compliance	38
4.2.2 Alternative B – Change the Season of Use to Exclude Spring Grazing	38
4.2.2.1 Livestock Grazing.....	38
4.2.2.2 Vegetation	38
4.2.2.3 Wildlife (Migratory Birds, Sensitive Species, Fish and Wildlife Excluding USFW Designated Species).....	38
4.2.2.4 Utah BLM Sensitive Plant Species	41
4.2.2.5 Soils.....	41
4.2.2.6 Mitigation Measures	42
4.2.2.7 Monitoring and/or Compliance	42
4.2.3 Alternative C – No Action (Continuation of Current Permit Terms)	43
4.2.3.1 Livestock Grazing.....	43
4.2.3.2 Vegetation	43
4.2.3.3 Wildlife (Migratory Birds, Sensitive Species, Fish and Wildlife Excluding USFW Designated Species)	43
4.2.3.4 Utah BLM Sensitive Plant Species	44
4.2.3.5 Soils.....	45
4.2.3.6 Mitigation Measures	45
4.2.3.7 Monitoring and/or Compliance	45
4.3 CUMULATIVE IMPACTS ANALYSIS.....	46
4.3.1 Livestock Grazing, Vegetation and Soils	46
4.3.2 Wildlife (Migratory Birds, Sensitive Species, Fish and Wildlife Excluding USFW Designated Species).....	47
4.3.3 Utah BLM Sensitive Plant Species.....	48

5.0 CONSULTATION AND COORDINATION	49
5.1 INTRODUCTION	49
5.2 PERSONS, GROUPS, AND AGENCIES CONSULTED	49
5.3 SUMMARY OF PUBLIC PARTICIPATION	50
5.4 LIST OF PREPARERS.....	50
6.0 REFERENCES.....	50
6.1 REFERENCES CITED.....	50

List of Tables

Table 1-1: Current Grazing Use Authorization.....	1
Table 1- 2: Federal Authorities and Responsibilities	3
Table 2-1: Grazing use to be authorized under the Proposed Action	7
Table 2-2: Sample of Grazing Rotation for a Four Year Period.	8
Table 2-3: Sample of Grazing Rotation for a Four Year Period.....	8
Table 2-4: Grazing use to be authorized under the Alternative B	10
Table 3-1: Vegetation Types	13
Table 3-2: Ecological Sites (Ecological Site Descriptions NRCS website)	14
Table 3-3: Frequency Data Summary	16
Table 3-4: Point Intercept Data Summary	17
Table 3-5: Special Status Species Occurring in Utah	20
Table 3-6: Migratory Bird Priority Species.....	24
Table 3-7: Special Status Plant Species may occur in Monument Wash Allotment.....	26
Table 5-1: List of Persons, Groups and Agencies Consulted	49
Table 5-2: List of Preparers	50

Appendices:

Appendix A: Maps

- Map #1: Monument Wash Allotment**
- Map #2: Sensitive Soils**
- Map #3: Dust Blowout Areas**
- Map #4: Drought Intolerant Soils**
- Map #5: Moderately Saline Soils**
- Map #6: Soils Susceptible to High Wind Erosion**
- Map #7: Sensitive Plant Surveys**

Appendix B: Interdisciplinary Team Analysis Record Checklist

Appendix C: External Scoping and Responses

Appendix D: Wildlife Friendly Fencing Guidelines

Appendix E: Evaluation of Utah's Standards for Rangeland Health and Guidelines for Grazing Management

Appendix F: Actual Use

Monument Wash Allotment Ten Year Permit Renewal

DOI-BLM-UT-Y010-2016-0078-EA

1.0 PURPOSE & NEED

1.1 Introduction

This Environmental Assessment (EA) has been prepared to disclose and analyze the environmental consequences of renewing a ten year grazing permit on the Monument Wash Allotment with additional terms and conditions. The EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The EA assists the BLM in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any “significant” impacts could result from the analyzed actions. “Significance” is defined by CEQ and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of “Finding of No Significant Impact” (FONSI). If the decision maker determines that this project has “significant” impacts following the analysis in the EA, then an EIS would be prepared for the project. If not, a Decision Record may be signed for the EA approving the selected alternative, whether the proposed action or another alternative. A Decision Record (DR), including a FONSI statement, documents the reasons why implementation of the selected alternative would not result in “significant” environmental impacts (effects) beyond those already addressed in the Moab Resource Management Plan (October, 2008).

1.2 Background

The current permittee of the Monument Wash Allotment (Authorization #4306376) requested to renew the ten year grazing permit for the Monument Wash Allotment. The Monument Wash Allotment is located approximately 24 miles north of Moab, Utah (Appendix A Map #1). The current grazing permit has been issued from November 21, 2013 to February 21, 2021, under the authority of Section 114, Public Law 107-67, and the Fiscal Year 2011 Appropriations Act.

The Animal Unit Months (AUMs) addressed throughout this document were taken directly from the existing ten year grazing permit (Grazing Authorization # 4306376). These numbers are represented in the current grazing use authorization; see Table 1-1 below. Active AUMs represent those AUMs associated with valid grazing preference.

Table 1-1: Current Grazing Use Authorization

Allotment Name and Number	Livestock			Active Permitted Use (AUMs)	Acres	Land Status
	Number	Kind	Season of Use			
Monument Wash 05392	861	Cattle	11/16 to 5/15	4713	70,462 8,736 91	BLM State Private

The Moab Field Office (MFO) recognizes these AUMs as valid, while understanding that forage allocation varies from season to season, and from year to year.

1.3 Need for the Proposed Action

The need for the proposed action is for the BLM to consider renewing the grazing permit for the Monument Wash Allotment while making adjustments to management to continue to move towards meeting Utah's Standards for Rangeland Health 1 upland soils and 3 desired plant species. In addition there is a need to implement a grazing management system to minimize the impacts to saline soils (Moab RMP (GRA-19, Pg. 71).

1.4 Purpose(s) of the Proposed Action

The purpose of the proposed action and alternatives are to modify current grazing practices on the Monument Wash Allotment to continue to make progress toward meeting Utah's Standards for Rangeland Health and to minimize impacts to saline soils and reduce salinity in the Colorado River drainage as required in the Moab RMP (GRA-19, page 71).

Improved allotments management would be achieved by modifying and renewing a grazing permit under the authority of the Taylor Grazing Act (TGA), the Federal Land Policy Management Act (FLPMA) and the Moab Field Office Resource Management Plan, approved in October of 2008 (2008 RMP). The grazing permit would be renewed for a period of ten years in accordance with the Federal Regulation at 43 CFR 4130.2. The BLM is responsible for ensuring that all management actions on public land conform to the appropriate land use plans, are site specific, and provide for balanced uses among different resource values.

1.5 Decision to be Made

The BLM Moab Field Office will decide whether or not to renew the grazing permit and, if renewed, what modifications will be made from the current permit.

1.6 Conformance with BLM Land Use Plan

As required by Federal regulation 43 CFR 1610.5, the proposed action and alternatives addressed in this document have been determined to be in conformance with the goals and objectives of the of the Livestock Grazing (GRA) section Moab RMP (2008), which are 1) "achieve the attainment of Standards for Rangeland Health and other desired resource conditions by maintaining appropriate utilization levels of the range through management prescriptions and administrative adjustments of grazing permits and 2) achieve healthy, sustainable rangeland ecosystems that support the livestock industry while providing for other resource values such as wildlife habitat, recreation opportunities, clean water, and functional watersheds.". It has been determined that the proposed action and alternatives would not conflict with other decisions throughout the Moab RMP (2008).

1.7 Relationship to Statutes, Regulations, or Other Plans

The proposed action and alternatives are in conformance with the livestock grazing provisions of the Taylor Grazing Act 1934), the Federal Land Policy and Management Act (1976), the Public Rangelands Improvement Act (1978), and the applicable grazing regulations at 43 CFR 4100.

The proposed action and alternatives also comply with the following additional Federal laws, State standards, and BLM policies as presented in Table 1-2.

Table 1- 2: Authorities and Responsibilities

Land Management and Use	
Federal Land Policy and Management Act of 1976, Section 201(a) (PL 94-579; 43 USC 1701 et seq.)	Directs the BLM to manage public lands “in a manner that will protect the quality of scientific, scenic, historic, ecological, environmental, air and atmospheric, water resources and archeological values” and to develop resource management plans (RMPs) consistent with those of state and local government to the extent that BLM programs also comply with federal laws and regulations..
National Environmental Policy Act of 1969 (PL 91-190; 42 USC 4321); 40 CFR Parts 1500-1508 CEQ implementation of NEPA; BLM Handbook H-1790-1; U.S. Department of the Interior Department Manual 516, Environmental Quality	Evaluation of impacts to environmental resources that may result from a proposed action prior to its implementation.
Grazing	
43 Code of Federal Regulations 4100 Grazing Administration-Exclusive of Alaska; General	Directs the BLM in the administrative functions of grazing management.
The Pierce Act of 1938 (52 STAT. 1033)	Directs federal agencies to lease State, county, or privately owned lands for grazing purposes with the boundaries of a grazing district. The leasing of these lands would be to promote the orderly use of the district.
The Taylor Grazing Act of 1934 (P.L. 73-865)	Directs the federal agencies to stop injury to the public grazing lands by preventing overgrazing and soil deterioration; to provide for their orderly use, improvements, and development; to stabilize the livestock industry dependent upon the public range.
Rangeland Health; Standards and guidelines for Healthy Rangelands (BLM UTSO, 1997)	Directs the field offices within Utah to set the minimum standard to achieve a healthy rangeland. It also sets guidelines for grazing management to help achieve those standards.

Land Management and Use	
Public Rangelands Improvement Act of 1978 (PRIA).	Requires the BLM to manage, maintain, and improve the condition of the public rangelands so they become as productive as feasible.
BLM Utah Riparian Management Policy (Instruction Memorandum IM No. UT 2005-091, September 2005).	Provides specific guidance to Utah BLM riparian lands while supporting all BLM national guidance directives (BLM Manual 1737 – Riparian-Wetland Area Management, Riparian-Wetland Initiative, and others).
Wildlife and Plants	
Endangered Species Act of 1973 (PL. 85-624; 16 USC 661,664 1008)	Coordination, consultation and impact review regarding generally listed threatened and endangered wildlife and plant species.
Migratory bird Treaty Act of 1918 (P.L. 65-186, 16 USC 703-712, as amended); EO 13186 Responsibilities of Federal Agencies to Protect Migratory birds; BLM MOU WO-230-2010-04 To Promote the conservation of Migratory Birds	Migratory bird impact coordination and protection of nesting migratory birds.
State of Utah Authorities and Responsibilities	
Cultural Resources	
Section 106 of National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.) and Advisory council Regulations on the Protection of Historic and Cultural Properties, as amended (36 CRF. Part 800)	Utah State Historic Preservation Office consultation on cultural resource survey, evaluation, and mitigation.
Wildlife	
UDWR Rules and Regulations, Rule 657 series; UAC Title 23, Wildlife Resources of Utah. Utah Division of Wildlife Resources	Coordination on wildlife and state sensitive species; management of big game and wildlife.
Grand county Authorities and Responsibilities	
County codes	Road use agreements/oversize trip permits, access permits, and road crossing; noxious weed control and designates economic uses such as livestock grazing.
State of Utah Authorities and Responsibilities	
Cultural Resources	
Section 106 of National Historic Preservation Act of 1966, as amended (16 U.S.C. 470 et seq.) and Advisory council Regulations on the Protection of Historic and Cultural Properties, as amended (36 CRF. Part 800)	Utah State Historic Preservation Office consultation on cultural resource survey, evaluation, and mitigation.
Wildlife	

Land Management and Use	
UDWR Rules and Regulations, Rule 657 series; UAC Title 23, Wildlife Resources of Utah. Utah Division of Wildlife Resources	Coordination on wildlife and state sensitive species; management of big game and wildlife.
Grand county Authorities and Responsibilities	
County codes	Road use agreements/oversize trip permits, access permits, and road crossing; noxious weed control and designates economic uses such as livestock grazing.

The proposed action and alternatives are in compliance with the Grand County Utah General Plan (2012). This Plan designates the land within the allotment as open for economic uses such as livestock grazing.

1.8 Identification of Issues

The BLM conducted internal review and public scoping to solicit input and identify environmental issues associated with the proposed action. Through input from the BLM interdisciplinary team (IDT), issues were identified for this EA by considering the resources that could be affected by the implementation of the proposed action and alternatives. These issues were identified during the internal review and are summarized below. Documentation of the determination of impacts is included in this EA as the Interdisciplinary Team Analysis Records (Appendix B). The notice of the preparation of an EA was posted on the ePlanning on December 8, 2015. A press release was issued on January 25, 2016 seeking public comments on the Proposed Grazing Permit Renewal for the Monument Wash Allotment. The current grazing permittee was notified by mail in 2014 of the BLM's intent to evaluate grazing on the Monument Wash Allotment through NEPA analysis and three meetings between the Moab Field Office and the permittee and his agents were conducted between September 11, 2014 and April 28, 2016. Initial scoping closed on February 15, 2016. Scoping comments were received from three parties; The State of Utah, Office of the Governor, Western Watersheds Project, and Marc Thomas. The detailed information including the scoping comments and responses are located in Appendix C.

The issues identified internally and externally during scoping are listed below:

1.8.1 Livestock Grazing

- How would grazing under new terms and conditions affect the livestock grazing on the Monument Wash Allotment?
- How would implementing a new grazing strategy affect livestock grazing on the Monument Wash Allotment?

1.8.2 Vegetation:

- How would grazing under new terms and conditions impact vegetation and would the changes in management assist to continue to make meet Utah's Desired Species Standard.

1.8.3 Wildlife (Migratory Birds, Sensitive Species, Fish and Wildlife Excluding USFW Designated Species)

- How would grazing under new terms and conditions affect general wildlife species?

1.8.4 Utah BLM Sensitive Species:

- How would grazing impact BLM State Sensitive Plant Species and their habitats?

1.8.5 Soils:

- How would grazing under new terms and conditions affect Sensitive Soils on the Monument Wash Allotment?
- How would grazing with a new management strategy impact soils and vegetation in order to continue to meet Utah's Upland Soils Standard?
- How would grazing management impact biological soil crusts?

1.9 Issues Considered but Not Carried Forward for Analysis

No other issues were identified.

1.10 Summary

This chapter has presented the purpose and need of the proposed project, as well as the relevant issues, i.e., those elements of the human environment that could be affected by the implementation of the proposed project. In order to meet the purpose and need of the proposed project in a way that resolves the issues, the BLM has considered and/or developed a range of alternatives. These alternatives are presented in Chapter 2. The potential environmental impacts or consequences resulting from the implementation of each alternative considered in detail are analyzed in Chapter 4 for each of the identified issues.

2.0 DESCRIPTION OF ALTERNATIVES, INCLUDING PROPOSED ACTION

2.1 Introduction

Alternatives are required in a NEPA analysis, but alternatives must be "reasonable". Alternatives must be technically and economically feasible (CEQ, 1981) and must provide the opportunity to achieve the purpose and need for the proposed project. Alternatives should explore the range of

potential issues, and thus, alternative development is strongly influenced by the results of the scoping process.

Alternative A – Proposed Action: This alternative involves: 1) developing an AMP that includes a grazing management system which allows spring rest in at least 50percent of the allotment and 2) renewing the existing grazing permit with new terms and conditions.

Alternative B – Change the Season of Use to Exclude Spring Grazing: This alternative involves: 1) changing the season of use to November 16 to February 28 in order to exclude spring grazing, 2) renewing the existing grazing permit with new terms and conditions.

Alternative C – No Action: This alternative involves renewing the current permit for a term of 10 years with the same terms and conditions as the existing permit.

2.2 Alternative A – Proposed Action

This alternative is designed to allow grazing while increasing the desired plant species and protecting saline soils by implementing a grazing management system that would rest at least 50 percent of the allotment every spring.

The proposed action is the renewal of a grazing permit for cattle (refer to Table 2-1), operated under a grazing management system that incorporates spring rest in at least 50 percent of the allotment. Currently the allotment consists of two pastures: East and West, but these are unfenced and without topographic barriers to keep cattle within them.

The proposed Action would serve as the functional equivalent of an Allotment Management Plan as described in 43 CFR 4120.2.

Resource Objectives:

- 1) Protect saline soils. (Moab RMP grazing decision, GRA-19: Grazing in Saline Soils, pg. 71)
- 2) Improve frequency, diversity, density, age classes, and productivity of desired plant species (Indian ricegrass, galleta grass, shadescale, Castlevally saltbush and mat saltbush, which is necessary to ensure reproductive capability and survival of these species in order to continue to meet Utah’s Rangeland Health Standards.

Grazing Practices to meet resource objectives:

Authorize cattle grazing during the season of use and with the number of AUMs identified in Table 2-1.

Table 2-1: Grazing use to be authorized under the Proposed Action

Allotment Name and Number	Livestock			Active Permitted Use (AUMs)	Acres	Land Status
	Number	Kind	Season of Use			
Monument Wash 05392	861	Cattle	11/16 to 5/15	4713	70,462	BLM

Allotment Name and Number	Livestock			Active Permitted Use (AUMs)	Acres	Land Status
	Number	Kind	Season of Use			
					8,736 91	State Private

Grazing Management Strategy:

Currently there are no fenced pastures on the Monument Wash Allotment. The goal of the grazing management strategy is to create use areas that would allow a grazing management system which would include spring rest for at least 50 percent of the allotment each year.

Spring rest in at least 50 percent of the allotment would be accomplished by herding. The ranchers would also use temporary panels to close off any waters that they feel would assist in keeping the cattle in the proper use area. Each year the Moab Field Office and the permittee of the Monument Wash Allotment would meet before fall grazing and again before spring grazing to work together and determine which use areas would be closed to spring use, based on past use, available water, and climatic conditions. The grazing rotation would allow at least 50 percent of the allotment to be rested each year in the spring. A sample grazing rotation is shown below in Table 2-2.

Table 2-2: Sample of Grazing Rotation for a Four Year Period.

Spring Grazing (3/7 to 5/15)	East	West	North	South
Year 1	Graze	Rest	NA	
Year 2	Rest	Graze		
Year 3	NA		Graze	Rest
Year 4			Rest	Graze

If after five years herding is not effective in allowing at least 50 percent of the allotment spring rest a fence would be constructed along the Yellowcat road that would create an east and west pasture on the allotment. One pasture would be rested every year in the spring.

Construction of this fence, if needed, would not occur during the antelope fawning season, May 1 through June 15. Design of the fence would follow Appendix D and would include an antelope friendly construction with lay-down fences, underpasses or other passages every 2 to 3 miles where antelope concentrate to cross. The grazing permittees would consult with the Moab BLM prior to construction.

Each year the Moab Field Office and the permittee of the Monument Wash Allotment would meet before fall grazing and again before spring grazing to work together and determine how cattle would rotate through the use areas on the allotment based on past use, available water, and climatic conditions. The grazing rotation would allow at least 50 percent of the allotment to be rested each year in the spring. A sample grazing rotation is shown below in Table 2-3.

Table 2-3: Sample of Grazing Rotation for a Four Year Period.

Spring Grazing (3/7 to 5/15)	East	West
------------------------------	------	------

Year 1	Graze	Rest
Year 2	Rest	Graze
Year 3	Graze	Rest
Year 4	Rest	Graze

Monitoring Plan:

Monitoring in the Moab Field Office is conducted following the Draft Utah Monitoring Manual for Upland Rangelands. The Monument Wash Allotment key areas for monitoring were converted to nested frequency and line point intercept for long term trend in 2010. In 2013 an enclosure was constructed at one existing key area and a new key area was established with an enclosure.

This monitoring along with soil stability monitoring will be used to determine if grazing management needs to be adjusted during the term of the permit.

2.2.1 Terms and Conditions

The following items would be included in the terms and conditions of the functional equivalent of the AMP and the ten year permit. The terms and conditions of the grazing permit may be modified if additional information indicates that a revision is necessary to conform to the grazing regulations in 43 CFR Part 4100.

1. The permittee has the flexibility of starting 15 days early or remaining 15 days late only when forage conditions are determined by the BLM to be sufficient to allow grazing by cattle without causing damage. Grazing would not exceed the permitted AUMs of 4,713.
2. An actual use grazing report must be submitted to the BLM within 15 days after the end of the grazing use period. Failure to file an actual use report may result in future grazing authorizations being withheld.
3. Feeding protein supplements, salt-grain mixtures, hay, and/or other roughage on public lands is prohibited without prior authorization of the authorized officer. Protein blocks and salt would be placed in outlying areas as necessary to help distribute livestock. These must be at least ¼ mile from water sources.
4. Range improvements assigned in cooperative agreements and range improvement permits must be maintained in a usable condition prior to livestock use each year. Construction of new range improvements on BLM lands is prohibited without approval from the authorized officer. Maintenance would be in accordance with cooperative agreements and/or range improvement permits. Failure to maintain assigned projects in a satisfactory condition may result in withholding authorization to graze livestock until maintenance is completed.
5. As specified in the 2008 Moab RMP, moderate utilization levels (40 to 60 percent) would be used to indicate if general management objectives can be met. Utilization levels above those identified as appropriate would be used to adjust livestock use on a yearly basis and possible early removal from the allotment as needed. The majority of the allotment would meet

utilization standards. Exceptions may be granted in concentration areas such as water developments and salting areas.

6. Grazing would be in conformance with 43 CFR Part 4180: Fundamentals of Rangeland Health and Standards and Guidelines for Grazing Administration.
7. Livestock operations would be conducted in accordance with the functional equivalent of the Monument Wash AMP analyzed in the proposed action, including the resource objectives and the grazing practices to meet those resource objectives.

2.3 Alternative B – Change the Season of Use to Eliminate Spring Grazing

This alternative is designed to allow grazing while increasing the desired plant species and protecting saline soils by changing the season of use. There would be a corresponding reduction in the stocking rate with 1,741 AUMs being placed into suspended use. The new active preference for the allotment would be 2,972 AUMs.

Alternative B is the same as the proposed action except the season of use would be changed to eliminate spring grazing from the Monument Wash Allotment, 1,741 AUMs would be placed into suspended use, terms and conditions one would reflect the reduction in Active AUMs (Table 2-4), and there would be no need to construct a pasture fence or to require herding of cattle.

Table 2-4: Grazing use to be authorized under the Alternative B

Allotment Name and Number	Livestock			Active Permitted Use (AUMs)	Suspended AUMs	Acres	Land Status
	Number	Kind	Season of Use				
Monument Wash 05392	861	Cattle	11/16 to 2/28	2972	1741	70,462 8,736 91	BLM State Private

2.3.1 Terms and Conditions

The terms and conditions are the same as the proposed action with the exception of:

1. The permittee has the flexibility of starting 15 days early or remaining 15 days late only when forage conditions are determined by the BLM to be sufficient to allow grazing by cattle without causing damage. Grazing would not exceed the permitted AUMs of 2,972.

2.4 Alternative C – No Action

The existing permit was signed on August 19, 2014 for the term of August 6, 2014 to February 14, 2021 under the appropriations rider.

Under the No action Alternative, the BLM would issue a new permit for 10 years with the same terms and conditions as the existing permit.

2.4.1 Terms and Conditions

1. Supplemental feeding without written authorization is prohibited.

2. The requirement to maintain assigned range improvements is a condition of this permit.
3. An actual use report is due 15 days following grazing use.

2.5 Alternative Considered, but Eliminated from Further Analysis:

2.5.1 Increase the Authorized AUMs on the Monument Wash Allotment (Externally generated from scoping comments received by The State of Utah, Office of the Governor).

The permittee has not requested to analyze an increase in authorized AUMs. It is unknown whether this allotment could support an increase in AUMs.

2.5.2 Convert the Monument Wash Allotment to a Common Use Allotment with Cattle and Sheep (Externally generated from scoping comments received by The State of Utah, Office of the Governor).

The conversion of cattle to sheep or the permitting of sheep grazing within recognized bighorn sheep habitat is not supported by the 2008 Moab RMP. The Moab BLM has already decided in GRA-8, WL-28 and WL-33 where the Moab BLM would not permit the conversion of cattle to sheep or common use of both livestock (cattle and sheep) in recognized bighorn sheep habitat.

The permittee has not requested to change the Monument Wash Allotment to a common allotment that authorizes both cattle and sheep grazing.

2.5.3 No Grazing.

This alternative was considered but is eliminated from further consideration in this EA for the following reasons:

- There were no issues that required a “No Livestock Grazing Alternative” (no grazing for an indefinite period of time) to resolve them.
- The Moab RMP does not include this allotment as not available for livestock grazing.
- Rangeland Health Assessment evaluation shows that Standards 1, 2, 3, and 4 are being met under the current grazing season of use, class of livestock and AUMs authorized in the current permit.

3.0 AFFECTED ENVIRONMENT

3.1 Introduction

This chapter presents the potentially affected existing environment (i.e., the physical, biological, social, and economic values and resources) of the impact area as identified in the Interdisciplinary Team Checklist found in Appendix B and presented in Chapter 1 of this assessment. This chapter provides the baseline for comparison of impacts/consequences described in Chapter 4.

3.2 General Setting

The Monument Wash Allotment is located northeast of the Moab area and is bounded by Arches National Park to the south and west, the Highlands to the south, and the Cisco Allotment to the east.

The Monument Wash Allotment is a desert allotment. A map of the allotment is attached (Appendix A Map #1). The following list shows the acreage in the allotment and current active federal cattle AUMs within the allotment:

<u>BLM Acres</u>	<u>Active AUMs</u>
70,462 acres	4,713 AUMs

Scattered across the allotment are range improvements that were implemented to improve range conditions. These improvements consist of fencing (to control the livestock and keep them within a given area), cattleguards (to allow for easier recreational access), and water developments (reservoirs, spring developments, and wells to distribute livestock over a broader area and reduce livestock pressure on natural water sources).

Geographically, the area of the proposed action is part of the Colorado Plateau physiographic province. The area in general is mainly situated within residuum and alluvium soil deposits derived dominately from marine shale. Soils vary from coarse sands, fine sandy loams, gravelly sandy loams, clay, silty clay loam and loams. Topography for the Monument Wash Allotment is mostly level to rolling terrain. Surface waters for this allotment drain into the Colorado River via a series of desert washes. There is one perennial water sources within the Monument Wash Allotment

The climate is characterized by cold winters, hot summers and with a range of 5-8 inches of annual precipitation within the Monument Wash Allotment. Elevation ranges from approximately 4,000 to 5,000 feet. Most precipitation falls during spring, late summer and winter months within the allotment. Soil erosion occurs mainly during summer thunderstorm events, as these are usually high intensity and short duration storms. Precipitation records for these allotments are available from three local rain gauges (refer to Appendix E- Evaluation of Utah's Standards for Rangeland Health and Guidelines for Grazing Management): .

The allotment contains habitat for both game and nongame wildlife species.

Historic cultural uses of the area include approximately 100+ years of range use by livestock ranching. Livestock ranching was once a major part of the local traditions and economic enterprise; however, the social and economic emphasis of Grand County is currently based on tourism and recreation. Ranching now plays a minor role in the areas social-economic atmosphere.

3.3 Issues Brought Forward for Analysis

All the issues listed in Chapter 1 are brought forward for analysis and are discussed in the chapter below.

As identified in Appendix B- Interdisciplinary Team Analysis Record Checklist, the following resources have the potential to be impacted 1) Livestock Grazing, 2) Vegetation, 3) Wildlife (Migratory Birds, Utah BLM Sensitive Species, Fish and Wildlife Excluding USFW Designated Species, 4) BLM State Sensitive Plant Species, and 5) Soils. Specific resources or issues that may be affected by one of the alternatives are carried forward for analysis in Chapter 4 “Environmental Consequences”.

3.3.1 Livestock Grazing

Currently the Monument Wash Allotment has an authorization for 861 head of cattle from November 16 through May 15 for a total of 4,713 AUMs. The allotment consists of 79,289 acres. The Monument Wash Allotment was grazed by sheep until the mid-1980’s when it was converted to cattle.

The Monument Wash Allotment is divided into two pastures. The East pasture is east of Sagers wash and the West pasture is west of Sagers Wash, but the pasture boundary is not fenced and there are no effective topographic barriers that will keep the cattle in one pasture at a time. Currently there is no grazing management system in use on the allotment. Historically cattle have been grazed on the allotment by dispersing them throughout the allotment at the water locations, with limited herded into areas with available water.

3.3.2 Vegetation

There are three known vegetation types located in the Monument Wash Allotment. The dominant type is Salt Desert Scrub. Table 3-1 lists the three known types and the amount of acreage for each in the allotment.

Table 3-1: Vegetation Types

Type	Acres
Blackbrush	1,587
Sagebrush	780
Salt Desert Scrub	75,734
Unknown	1,187

Some areas on the allotment show residual impacts from the sheep grazing that occurred, including sheep bedding areas where perennial vegetation has been replaced by annual wheatgrass or by non-native invasive species (cheatgrass, halogeton, Russian thistle).

Ecological Sites

Rangeland landscapes are divided into ecological sites for the purposes of inventory, evaluation, and management. Ecological sites have developed a characteristic kind and amount of vegetation. The natural plant community on an ecological site is typified by an association of species that differs from that of other ecological sites, in the kind and/or proportion of species or in annual production. While the natural plant community of a particular ecological site is recognized by characteristic patterns of species associations and community structure, the specific species present from one location to another may exhibit tremendous variability. The natural plant community is not a precise assemblage of species for which the proportions are the same from place to place, or even in the same place from year to year (Utah Ecological Site Descriptions, 1994). The distinctive plant communities associated with each ecological site (including the tremendous variability which frequently occurs) can be identified and described, and are called ecological site descriptions.

The ecological sites where grazing occurs in the Monument Wash Allotment are listed in Table 3-2 below.

Table 3-2: Ecological Sites (Ecological Site Descriptions NRCS website)

Ecological site	Dominant Plants	Key Areas
Alkali Fan (Castlevally Saltbush)	Castlevally saltbush, shadscale, indian ricegrass, squirreltail, and galleta grass.	none
Alkali Flat (Greasewood)	Greasewood, fourwing saltbush, indian ricegrass, bottlebrush squirreltail, globemallow.	none
Desert Clay (Castlevally Saltbush)	Castlevally saltbush, indian ricegrass, globemallow and galleta grass	5 and 7
Semidesert Shallow Loam (Utah Juniper-Pinyon James Galleta)	Utah Juniper, fourwing saltbush, indian ricegrass, galleta grass, and sand dropseed.	none
Desert Sandy Loam (Fourwing Saltbush)	Indian ricegrass, galleta grass, Sand dropseed, and fourwing saltbush	4
Desert Shallow Clay (Mat Saltbush)	Mat saltbush, indian ricegrass, and galleta grass	none
Desert Shallow Sandy Loam (Shadescale)	Shadescale and galleta grass. Indian ricegrass and sand dropseed may or may not be present	none
Desert Loam (Shadescale)	Indian ricegrass, galleta grass, sand dropseed, shadescale, and Torrey's jointfir,	1

Common attributes used to characterize the health of vegetation

Frequency – The ratio between the number of sample units that contain a species and the total number of sample units.

Vigor – The relative health of a plant, judged by observing its robustness and over-all ability to sustain and regenerate itself considering the climate and productivity of the site it occupies.

Diversity – The number of different species in a particular area weighted by some measure of abundance.

Density - Number of individuals per unit area

Age classes – The distribution of different ages of the same species or group of species on a site.

Species productivity – The amount of plant growth produced annually.

Vegetative monitoring and trend on the Monument Wash Allotment

Vegetative trend data is an important tool used in determining if current management actions are effective in meeting, or enabling progress towards meeting, objectives related to the allotment. The trend of a plant community may be determined by noting changes in characteristics such as composition, density, cover, production, reproduction, and frequency of occurrence for vegetation species tempered with climatic variations and uses.

The important forage grass species on the Monument Wash Allotment include Jame's galleta grass and indian ricegrass. Important shrub species are Castlevalley saltbush, mat saltbush, shadescale, fourwing saltbush, and spiny hopsage. These species are the main plant species used to monitor vegetative trend on the Monument Wash Allotment. These forage species are also the dominant plant species for the ecological sites listed in Table 3-2.

In the Monument Wash Allotment, photo density plots were established in the 1980s and 1990s. In 2013, the density studies were replaced with nested frequency and line intercept trend transects, recording foliar cover at key areas. Key areas are a relatively small portion of a range selected because of its location, use, or grazing value as a monitoring point for grazing use. It is assumed that key areas, if properly selected, will reflect the overall acceptability of current grazing management over the range. Collected monitoring data is summarized and used to help determine directions in vegetative trend over a period of time. Historically nine key areas were established on the Monument Wash Allotment. In 2010, four out of the nine key areas were converted from density monitoring to frequency and point intercept monitoring. In 2013 key area 10 was established and baseline data was collected. Because only baseline data has been collected for this key area it was not used for the evaluation of trend on the allotment.

Trend data

Frequency:

As shown in Table 3-3 below the overall vegetation on Monument Wash Allotment is static to upward trend. Shadescale is the only plant in a downward trend in Key area 1. Spiny hopsage

is the only plant in a downward trend in key area 4. Valley Saltbush and budsage are in a downward trend in key area 5. Key area 7 has no plant species in a downward trend.

Table 3-3: Frequency Data Summary

Key Area 1

Species	% Frequency/Year								Trend Rating
	6x6 in		12x12 in		24x12 in		24x24 in		
	2010	2013	2010	2013	2010	2013	2010	2013	
Indian ricegrass	1	2	4	5	4	6	10	12	Static
Jame's galleta	14	23	26	36	38	46	52	58	Up
Shadescale	24	16	32	24	41	32	57	46	Down
Pricklypear cactus	2	2	2	2	2	2	2	3	Static
Rabbitbrush	0	1	0	1	1	2	2	7	Up
Winterfat	0	0	0	1	0	1	2	2	Static
Sand dropseed	0.5	4.5	0.5	3	0	2	0	1	Up
Desert globemallow	0	4	0	2	0	2	0	0	Up

Key Area 4

Species	% Frequency/Year								Trend Rating
	6x6 in		12x12 in		24x12 in		24x24 in		
	2010	2013	2010	2013	2010	2013	2010	2013	
Indian ricegrass	1	2	4	2	4	2	11	10	Static
Jame's galleta	16	20	32	37	44	46	56	56	Up
Fourwing Saltbush	0	0	2	1	3	2	4	4	Static
Spiney hopsage	7	6	8	8	12	9	16	12	Down
Pricklypear cactus	2	2	7	6	11	10	13	13	Static
Sand dropseed	2	2	8	6	10	7	12	9	Static
Desert globemallow	0	8.5	0	4.5	0	2	0	1	Up

Key Area 7

Species	% Frequency/Year								Trend Rating
	6x6 in		12x12 in		24x12 in		24x24 in		
	2010	2013	2010	2013	2010	2013	2010	2013	
Indian ricegrass	0	0	2	0	4	3	6	4	Static
Jame's galleta	16	20	36	37	54	56	68	70	Static
Mat saltbush	4	4	6	5	8	6	11	10	Static
Valley saltbush	12	8	16	16	23	22	33	30	Static

Pricklypear cactus	1	0	2	2	2	2	4	4	Static
Winterfat	2	1	3	4	6	7	10	13	Static
Sandberg bluegrass	0	0	0	0	0	0	1	2	Static
Budsage	2	0	3	2	5	2	7	4	Static
Horsebrush	0	0	2	2	2	2	2	2	Static

Key Area 5

Species	% Frequency/Year								Trend Rating
	6x6 in		12x12 in		24x12 in		24x24 in		
	2010	2013	2010	2013	2010	2013	2010	2013	
Jame's galleta	18	16	30	33	40	39	52	52	Up
Mat saltbush	16	18	22	22	29	28	36	36	Static
Valley saltbush	11	10	20	16	26	22	32	31	Down
Budsage	3	2	6	4	8	7	15	12	Down
Desert globemallow	0	0	0	2	0	2	0	4	Up

Point Intercept

Table 3-4: Point Intercept Data Summary

Key Area 1

Species	% Cover by Year		
	*2008	2010	2013
Bare Ground	18.00	53.50	57.63
Duff	41.00	6.63	0.50
Embedded Litter	4.00	11.00	2.50
Other Litter	0.00	0.00	13.38
Woody Litter >5mm	2.00	2.13	1.13
Biological Soil Crust	6.00	2.50	1.00
Rock >5mm	14.00	2.75	5.00
Indian ricegrass	6.00	0.38	0.75
Jame's galleta	9.00	6.00	7.25
Shadescale	11.00	14.25	6.76
Pricklypear cactus	1.00	0.00	0.00
Winterfat	1.00	0.13	0.13
Tansyaster	3.00	0.00	0.00
Cheatgrass	41.00	0.38	1.26
Halogeton	0.00	0.00	0.75

Key Area 4

Species	% Cover by Year		
	*2008	2010	2013
Bare Ground	21.00	44.88	42.5
Duff	47.00		
Embedded Litter	3.00	21.13	1.25
Other Litter	6.00	0.13	15.25
Woody Litter >5mm	1.00	2.25	2.63
Biological Soil Crust	1.00	0.50	0.13
Indian ricegrass	0.00	1.63	1.13
Jame's galleta	7.00	7.66	9.38
Fourwing saltbush	0.00	0.75	0.76
Spiney hopsage	6.00	2.88	3.13
Pricklypear cactus	3.00	0.79	1.63
Desert globemallow	1.00	0.13	0
Sand dropseed	0.00	1.50	1.88
Broom snakeweed	4.00	0	0.13
Cheatgrass	54.00	0	12.88
Russian thistle	1.00	15.63	6.88

Key Area 7

Species	% Cover by Year		
	*2008	2010	2013
Bare Ground	45.00	57.00	67.63
Embedded Litter	0.00	12.88	0.38
Duff	12.00	*	*
Other Litter	3.00	0.00	14.88
Woody Litter >5mm	1.00	1.00	0.13
Biological Soil Crust	19.00	7.13	0.13
Rock >5mm	4.00	1.13	3.75
Indian ricegrass	0.00	0.13	0.13
Jame's galleta	8.00	7.01	4.01
Mat saltbush	3.00	1.26	1.00
Valley saltbush		4.88	3.25
Pricklypear cactus	0.00	0.38	0.26
Winterfat	0.00	0.75	0.50
Budsage	0.00	0.38	0.25
Grand buchwheat	5.00	3.00	1.63
Desert globemallow	0.00	0.50	0.25
Horsebrush	0.00	0.25	0.38
Annual wheatgrass	0.00	0.13	0.25
Cheatgrass	9.00	1.13	0.13
Halogeton	0.00	0.38	0.00

Key Area 5

Species	% Cover by Year		
	*2008	2010	2013
Bare Ground	33.00	54.88	67.50
Duff	13.00	0.38	0.25
Embedded Litter	0.00	10.63	0.00
Other Litter	13.00	0.00	4.38
Woody Litter >5mm	0.00	1.25	0.63
Biological Soil Crust	14.00	7.51	2.88
Rock >5mm	10.00	0.25	0.00
Indian ricegrass	0.00	0.13	0.00
Jame's galleta	1.00	5.66	5.88
Mat Saltbush	14.00	9.38	7.88
Valley Saltbush		6.25	6.74
Budsage	0.00	1.00	1.00
Desert globemallow	0.00	0.75	0.13
Cheatgrass	21.00	0.00	1.38
Halogeton	0.00	0.50	0.50

****Key Area 2**

Species	% Cover by Year	
	*2008	2010
Bare Ground	24.00	53.38
Embedded Litter	0.00	15.50
Duff	33.00	0.13
Other Litter	11.00	0.00
Woody Litter >5mm	2.00	0.88
Biological Soil Crust	6.00	5.13
Rock >5mm	6.00	0.00
Indian ricegrass	0.00	0.13
Jame's galleta	2.00	2.00
Mat saltbush (ATCO4)	2.00	1.00
Valley saltbush	4.00	4.25
Budsage	0.00	0.75

****Key Area 9**

Species	% Cover by Year	
	*2008	2010
Bare Ground	11.00	40.00
Embedded Litter	0.00	18.75
Duff	57.00	0.63
Other Litter	2.00	0.00
Woody Litter >5mm	1.00	2.13
Biological Soil Crust	0.00	0.13
Rock >5mm	2.00	6.50
Indian ricegrass	0.00	0.38
Jame's galleta	7.00	7.13
Shadescale	0.00	3.25
Winterfat	1.00	2.63
Desert globemallow	1.00	2.50

Grand buckwheat	2.00	0.75
Desert globemallow	0.00	0.13
Halogeton	0.00	4.00
Cheatgrass	37.00	0.25
Plantain	3.00	0.00

Russian Thistle	0.00	0.50
Cheatgrass	61.00	2.75
Halogeton	8.00	7.63

****Key Area 8**

Species	% Cover by Year	
	*2008	2010
Bare Ground	25.00	43.63
Embedded Litter	1.00	24.13
Duff	25.00	0.25
Other Litter	19.00	0.00
Woody Litter >5mm	0.00	0.75
Biological Soil Crust	2.00	0.79
Rock >5mm	7.00	4.38
Indian ricegrass	2.00	0.13
Jame's galleta	20.00	8.25
Shadescale	5.00	4.00
Sand Dropseed	0.00	1.25
Pricklypear cactus	1.00	0.13
Winterfat	0.00	0.50
Desert globemallow	0.00	0.25
Russian Thistle	0.00	0.63
Cheatgrass	22.00	3.38
Halogeton	0.00	4.38

****Key Area 6**

Species	% Cover by Year	
	*2008	2010
Bare Ground	39.00	66.25
Embedded Litter	0.00	10.38
Duff	29.00	0.00
Other Litter	9.00	0.00
Woody Litter >5mm	0.00	1.13
Rock >5mm	2.00	2.75
Indian ricegrass	2.00	0.13
Jame's galleta	3.00	0.25
Mat saltbush	5.00	4.25
Valley saltbush	9.00	3.63
Annual wheatgrass	0.00	3.88
Cheatgrass	0.00	2.25

****Key Area 3**

Species	% Cover by Year	
	*2008	2010
Bare Ground	25.00	44.00
Embedded Litter	0.00	8.00
Duff	53.00	4.00
Woody Litter >5mm	0.00	0.63
Biological Soil Crust	11.00	0.13
Rock >5mm	0.00	0.13
Plantain	1.00	0.00
Cheatgrass	40.00	2.00

Halogeton	1.00	15.50
Russian Thistle	15.00	19.75

* The line point intercept data was collected by running two 50 foot transects for a total of 100 cover points. In 2010 and 2013 the line point intercept data was collected using the Draft Utah Monitoring Manual protocol which, collects 800 points of cover data.

** Data at these key areas was utilized for rangeland health evaluation but no long term trend.

Actual Use Data

As summarized in appendix F of this EA, the average actual use from 1987 to 2015 was 2864 AUMs used or 60% of the active preference AUMs.

Utah's Rangeland Health Standards:

The evaluation conducted on the Monument Wash Allotment found that The Desired Species Standard was being met for the allotment with the exception of key area 3, which appears to be an old sheep bedding ground that is currently a monoculture of invasive species (see appendix E)

3.3.3 Wildlife (Migratory Birds, Sensitive Species, Fish and Wildlife Excluding USFW Designated Species)

Utah BLM Sensitive Species

Special Status Species Management Policy 6840 requires the BLM to manage State Sensitive Animal Species to prevent the need for future listing under the ESA. A total of 40 Utah State Sensitive Animal Species animals potentially occur within the MFO, seventeen (17) are either known to occur or the habitat is present for the species to potentially occur within the action area (UDWR, 2015), though six will not be impacted by the proposed action and will not be discussed further within this EA

The BLM maintains a list of sensitive species that may occur on BLM managed lands. The BLM Utah State director's Sensitive Species List includes those that are Federally listed species that are listed in Table 3-4 and also those identified by the BLM and those listed as State sensitive by the State of Utah. These species are either on the BLM Utah State director's Sensitive Species List or the UDWR's State Sensitive Species List. A brief description for wildlife species that will be further analyzed follows this table.

Table 3-5: Special Status Species Occurring in Utah

Common Name (<i>Scientific Name</i>)	Habitat	Habitat Value† and/or Known Occurrence in Project Area	Habitat Potential Within Project Area, that may be impacted Project Activities	Further Analysis (Yes/No)
Mammals				

Common Name (Scientific Name)	Habitat	Habitat Value† and/or Known Occurrence in Project Area	Habitat Potential Within Project Area, that may be impacted Project Activities	Further Analysis (Yes/No)
Allen's big-eared bat (<i>Idionycteris phyllotis</i>)	Rocky and riparian areas in woodland and scrubland regions, roosts in caves or rock crevices.	Substantial Value†	Species may occur within the project area. Livestock activities typically occurs during the day when bats are roosting, therefore no direct impacts will occur to bats that forage in the project area. Minimum site specific habitat alteration may occur but are not expected to reduce insect forage base. No impacts expected during roosting or to roosts.	No
Big free-tailed bat (<i>Nyctinomops macrotis</i>)	Rocky and woodland habitats, roosts in caves, mines, old buildings, and rock crevices.	No Habitat†		No
Fringed myotis (<i>Myotis thysanodes</i>)	Desert and woodland areas, roosts in caves, mines, and buildings.	Substantial Value†		No
Spotted bat (<i>Euderma maculatum</i>)	Found in a variety of habitats, ranging from deserts to forested mountains; roost and hibernate in caves and rock crevices.	Substantial Value†		No
Townsend's big-eared bat (<i>Corynorhinus townsendii</i>)	Occur in many types of habitat, but is often found near forested areas; roosts and hibernates in caves, mines, and buildings.	Limited Value†.		No
Western Red Bat (<i>Lasiurus blossevillei</i>)	Found near water, often in wooded areas, extremely rare in Utah.	No Habitat†		No
Gunnison's prairie dog (<i>Cynomys gunnisoni</i>)	Grasslands, semidesert and montane shrublands	No Habitat†	No habitat in project area.	No
Kit fox (<i>Vulpes macrotis</i>)	Open prairie, plains, and desert habitats	No Habitat†	Known occupancy – moderate potential for occurrence	Yes
White-tailed prairie dog (<i>Cynomys leucurus</i>)	Semi desert grasslands and open shrublands	Occupied/ Critical†	Known occupancy - high potential for occurrence	Yes
Birds				
Bald Eagle (<i>Haliaeetus leucocephalus</i>)	Roosts and nests in tall trees near bodies of water.	Winter †	Occasional winter sightings in project area, typically feeding on carrion along I-70. Cattle grazing on winter habitats is not expected to impact birds or habitat. No known winter roosts in allotment	No

Common Name (Scientific Name)	Habitat	Habitat Value† and/or Known Occurrence in Project Area	Habitat Potential Within Project Area, that may be impacted Project Activities	Further Analysis (Yes/No)
Bobolink (<i>Dolichonyx oryzivorus</i>)	Riparian or wetland areas.	No Habitat†	Rare migrant on BLM lands	No
Burrowing owl (<i>Athene cunicularia</i>)	Open grassland and prairies.	Primary Breeding†	Known occupancy - high potential for occurrence	Yes
Ferruginous hawk (<i>Buteo regalis</i>)	Flat and rolling terrain in grassland or shrub steppe; nests on elevated cliffs, buttes, or creek banks.	No Habitat†	Occupied nesting territories - high potential for occurrence	Yes
Long-billed curlew (<i>Numenius americanus</i>)	Grassland/ herbaceous- nesting in mixed fields with adequate, but not tall, grass cover and fields with elevated points	No Habitat†	Minimum habitat and occurrence in the MFO.	No
Short-eared owl (<i>Asio flammeus</i>)	Grasslands, shrublands, and other open habitats.	Winter†	Occasional winter resident, nesting does not occur in project area	No
Fish				
Bluehead sucker (<i>Catostomus discobolus</i>)	Fast flowing water in high gradient reaches of mountain rivers	No Habitat†	No Potential	No
Roundtail chub (<i>Gila robusta</i>)	Large rivers, and is most often found in murky pools near strong currents			No
Flannelmouth sucker (<i>Catostomus latipinnis</i>)	Large rivers, where they are often found in deep pools of slow-flowing, low gradient reaches			No

† Utah Conservation Data Center

Ferruginous Hawks

Ferruginous hawks are summer residents in open areas throughout Utah and year-round residents in southern Utah. Ferruginous hawks occur in grasslands, agricultural lands, sagebrush/saltbush/greasewood shrub lands, and at the margins of pinyon-juniper forests. These hawks exhibit a strong preference for elevated nest sites, cliffs, buttes, and creek banks. During winter, they use open farmlands, grasslands, deserts, and other arid regions where rabbits, prairie dogs, or other major prey species are present. The primary food is small mammals and in western Utah ferruginous hawks eat a large numbers of prairie dogs. There are documented nesting territories in the West Pasture.

Burrowing Owls

Burrowing owls are summer residents on much of Utah's plains and are casual winter residents in southern Utah and are known to nest within the project area. Burrowing owls are associated with dry, open habitat that has short vegetation and prairie dog burrows. Burrowing owls' diets consist of mainly insects, but the owl also consumes a variety of small mammals, birds, frogs, toads, lizards, and snakes. The presence of active and abandoned prairie dog colonies indicates there is suitable burrowing owl nesting habitat. There have been numerous nests documented throughout the allotment. The many acres of active and abandoned prairie dog colonies indicate the potential to expand burrowing owl nesting habitat.

Prairie dogs

Throughout the allotment there are both large historic and active white-tailed prairie dog colonies and ample expansion habitats for currently active colonies. Their diet consists mainly of grasses, stems, seeds, roots and bulbs. The populations of the prairie-dogs have been cyclic. During the past decade, the populations of prairie-dogs have been low throughout the Cisco Desert due to drought and possible plague infections. Though population densities are still far below those recorded in the mid-1980s, prairie-dog populations have been increasing due to higher precipitation and persistent moisture in the last few years. The many acres of active and abandoned prairie dog colonies indicate potential for expansion of prairie dog populations.

Kit Fox

The kit fox is native to much of the western United States and northern Mexico and is primarily nocturnal, but individuals may be found outside of their dens during the day. The species most often occurs in open prairie, plains, and desert habitats. The kit fox opportunistically feeds on small mammals, small birds, insects and plant matter. Currently no active dens have been documented within the allotment but there are known occurrences and historic den locations in the area. They generally live in small groups, digging clusters of dens with multiple entrances and have a strong affinity to natal den sites. Potential threats to the kit fox include diminishing prey base (small mammals and rodents) and water developments that encourage coyote and red fox distribution into kit fox home ranges, leading to competition and kit fox predation. Disturbances near natal dens while cubs are utilizing the den should be avoided. Typically natal and historic dens are occupied from March 1 through July 31. There are many documented sightings throughout the allotment and one den reported in the East Pasture and the entire allotment offers excellent habitat.

Migratory Birds

A variety of migratory song bird species may use the Monument Wash Allotment for breeding, nesting, foraging, and migratory habitats. Migratory birds are protected under the Migratory Bird Treaty Act of 1918 (MBTA). Unless permitted by regulations, the MBTA makes it unlawful to pursue, hunt, kill, capture, possess, buy, sell, purchase, or barter any migratory bird, including the feathers or other parts, nests, eggs, or migratory bird products. In addition to the MBTA, Executive Order 13186 sets forth the responsibilities of Federal agencies to further implement the provisions of the MBTA by integrating bird conservation principles and practices

into agency activities and by ensuring that Federal actions evaluate the effects of actions and agency plans on migratory birds.

A Memorandum of Understanding (MOU) between the BLM and USFWS (BLM MOU WO-230-2010-04) provides direction for the management of migratory birds to promote their conservation. At the project level, the MOU direction includes evaluating the effects of the BLM's actions on migratory birds during the NEPA process; identify potential measurable negative effects on migratory bird populations, focusing first on species of concern, priority habitats, and key risk factors. In such situations, BLM would implement approaches to lessen potential take. Identifying species of concern, priority habitats, and key risk factors includes identifying species listed on the USFWS Birds of Conservation Concern (BCC) that are most likely to be present in the project area and evaluating and considering management objectives and recommendations for migratory birds resulting from comprehensive planning efforts, such as Utah Partners in Flight American Land Bird Conservation Plan. The Utah Partners in Flight (UPIF) Working Group completed a statewide avian conservation strategy identifying "priority species" for conservation due to declining abundance distribution, or vulnerability to various local and/or range-wide risk factors. One application of the strategy and priority list is to give these birds specific consideration when analyzing effects of proposed management actions and to implement recommended conservation measures where appropriate.

The UPIF Priority Species List, the BCC list for Region 16 (Colorado Plateau) and the Utah Conservation Data Center database were used to identify potential habitat for priority species that could utilize habitats within this allotment.

Potential species are listed below.

Table 3-6: Migratory Bird Priority Species

Species	BCC§	PIF‡	DWR Habitat Value†	Breeding Habitat‡	Winter Habitat‡
Bald Eagle*	X		Winter	Lowland Riparian	Lowland Riparian
Burrowing Owl	X		Critical	High Desert Scrub/Grassland	Migrant
Brewer Sparrow	X	X	High Value Habitat	Shrubsteppe/High Desert Scrub	Migrant
Ferruginous Hawk	X	X	Breeding Habitat	Pinyon-Juniper	Grassland
Golden Eagle	X		Critical/High	Cliff	High Desert Scrub
Sage Sparrow		X	Critical	Shrubsteppe	Low Desert Scrub

*State Sensitive Species §Birds of Conservation Concern 2008 (USFWS, 2008) † Utah Conservation Data Center ‡Utah Partners in Flight Avian Conservation Strategy Version 2.0.

Raptors

Raptors and eagles typically use the same nest site year after year. Nesting and fledgling seasons for raptors vary but typically extend from March 1 through August 31 with eagles often

beginning their nesting season in January. The Project Area also offers suitable wintering and migration habitats for non-nesting several raptor species. The U.S. Fish and Wildlife Service (USFWS) issued guidelines for the protection of raptors that includes species-specific timing limitations and spatial offsets to active nests (Romin and Muck 2002). These guidelines have been incorporated into the BLM RMP.

Additionally, the Bald and Golden Eagle Protection Act, which initially protected only bald eagles, was amended in 1962 to include the golden eagle because of its dwindling populations and similar appearance to bald eagles when both eagles are young. The act prohibits anyone from "taking" eagles, including their parts, nests, or eggs without a permit issued by the Secretary of the Interior. A taking also covers impacts that result from human-induced alterations initiated around a previously used nest site during a time when eagles are not present, if, upon the eagle's return, such alterations agitate or bother an eagle to a degree that interferes with or interrupts normal breeding, feeding, or sheltering habits, and causes injury, death, or nest abandonment.

General Wildlife

Animals typically associated with desert shrub and greasewood plant communities are found in this area and may include numerous species of snakes, lizards, small mammals and songbirds. The most commonly observed species include gopher snakes, antelope ground squirrels, cottontail rabbits, blacktail jackrabbit, mourning doves, horned larks, and ravens. Predator species such as cougar, coyotes and fox can also be found here. The plant communities in the allotment would provide nesting habitat for various bird species.

Pronghorn Antelope

Pronghorn can be found throughout the western United States, Canada, and northern Mexico. They are generally associated with open plains where they feed mainly on forbs and grasses. Pronghorn prefer to occupy areas with large tracts of flat to rolling open terrain where they rely on keen eyesight and swift movement to avoid predators. They also rely on vegetation within the shrub and grassland plant communities for food. Pronghorn are often found in small groups and are usually most active during the day.

The UDWR and the Moab BLM have identified approximately 73,285 acres of year round crucial habitat for antelope in the Monument Wash Allotment. The herd was approaching over 900 animals but drought in the late 1990s reduced the Cisco antelope herd to fewer than 200 animals in 2004. Increased precipitation in recent years has helped to produced adequate vegetation resulting in improved fawn and adult survival. Antelope numbers have since increased to over 600 animals as of late 2014. Lack of consistent water sources, adequate forage availability and vegetative cover for antelope fawning may be limiting factors to antelope populations in the Cisco Desert.

3.3.4 Utah BLM Sensitive Plant Species

The BLM's Special Status Species Management Policy (6840 Manual Section) (Rel. 6-121) Directs the BLM to identify and protect sensitive species. The Utah Sensitive Species List, December 14, 2007 was used to identify potential habitat for state sensitive species. A total of two Utah BLM Sensitive Plant Species that has the potentially to occur within the Monument Wash Allotment, though two will not be impacted by the proposed action or alternatives and will not be discussed further within this EA.

The BLM maintains a list of sensitive plant species that may occur on BLM managed lands. The following sensitive plant species may occur on Monument Wash Allotment are listed in Table 3-6 and also those identified by the BLM and those listed as State sensitive by the State of Utah. A brief description for plant species that will be further analyzed follows this table.

Table 3-7: Special Status Plant Species may occur in Monument Wash Allotment

Common Name (Scientific Name)	Habitat	Habitat Value and/or Known Occurrence in Project Area	Habitat Potential Within Project Area, that may be impacted Project Activities	Further Analysis (Yes/No)
Plants				
Cisco milkvetch (<i>Astragalus sabulosus</i> var. <i>sabulosus</i>)	Grows in salt desert shrub communities on the Mancos Shales Formation (Cisco Desert) at 4,250 to 5,250 feet elevation. Flowering occurs in late March through May. Cisco milkvetch is endemic to the Grand River Valley (Cisco Desert) in Grand County, Utah.	Occupied Habitat	This plant occurs within the Mounument Wash Allotment. The populations of Cisco milkvetch often grows in locations where oil and gas activity is occurring in the form of roads, drill sites, wells, storage tanks and pipelines. The recreational use is increasing in the Cisco Desert due to off-road vehicle use. This allotment has been grazing by sheep in the past, but is now grazed by cattle. Cisco milkvetch is not palatable for livestock but could be affected by the trampling of livestock, though no evidence of it has been seen. There would be no impacts from cattle grazing to this species.	No
Entrada rushpink (<i>Lygodesmia grandiflora</i> var. <i>entrada</i>)	This plant grows in mixed desert shrub and juniper communities between 4,400 to 4,800 feet in elevation. Flowering occurs in June.	Limited Habitat	The threats to Entrada rushpink are OHV, exploration for oil, gas and mining activities and livestock grazing. No	Yes

Common Name (Scientific Name)	Habitat	Habitat Value and/or Known Occurrence in Project Area	Habitat Potential Within Project Area, that may be impacted Project Activities	Further Analysis (Yes/No)
	Entrada rushpink is endemic to Utah in Emery, Grand and San Juan counties.		known populations of this plant species is within this allotment. This plant is palatable by livestock grazing.	
Canyonlands lomatium (<i>Lomatium latilobum</i>)	This plant grows in rock crevices and sandy deposits of Entrada and Navajo Sandstone often in slot canyons and between fins, in Utah mainly in pinyon-juniper and desert shrub communities and between 5,000 to 6,000 feet in elevation. Flowering occurs in April to June. Canyonlands lomatium is found in southeast Utah in Grand and San Juan Counties. Populations are found near Moab in slot canyons and/or on very steep slopes and is inaccessible to cattle.	Limited Habitat	The existing threats are recreation use (people trampling), industrial development, and mineral exploration are threats to this species. The area within the Monument Wash Allotment may have some habitat in the southern portion of the allotment next to the Arches National Park. This area is very steep, rough terrain, lack of livestock forage and livestock water. There is no known populations of this plant within this allotment. This area is inaccessible to livestock and there would be no impacts to livestock grazing on this plant species.	No

3.3.5 Soils

Soil information comes from the Soil Survey of Grand County Utah, Central Part (USDA,1981) and from field observations made during assessments and monitoring of the allotment. Based on existing soil survey information and field observations approximately 69,068 acres (87 percent) of the soils in the allotment are considered sensitive. Sensitive soils are defined as soils having characteristics that make them extremely susceptible to impacts or difficult to reclaim or restore after disturbance. They include soils that have high water or wind erosion, are saline or sodic, are droughty or have limitations to grazing, low nutrient levels, or very steep slopes (MFO Resource Management Plan October 2008).

The allotment contains 54,331 acres (69percent) moderately saline soils, 36,696 acres (46percent) soils with high wind erosion hazard ratings, and 3,362 acres of dust blowout area.

Below is a summary of sensitive soils (map #2) that occur in the allotment. Note that soils may have multiple limitations, such as moderate salinity and high wind erosion hazard.

Moderately saline soils:

Approximately 54,331 acres or 69 percent of the allotment have moderately saline soils (map #5). These soils can contribute salinity and selenium to the Colorado River Basin by storm runoff to the Colorado River (USDI BLM RMP p. 3-126).

Soils with high wind erosion potential:

Soils susceptible to with high wind erosion cover 36,696 acres, about 46 percent of the allotment (map #6). These soils should be managed for high amounts of ground cover (biological soil crusts, litter, and plants) which stabilize the soils and reduce erosion (MFO Resource Management Plan October 2008, SOL-WAT-12).

Dust blowout areas:

There are six dust blowout areas in the Monument Wash Allotment that is approximately 3,362 acres, (see Map #3).

Soils adversely affected by drought:

Almost 89 percent (70,631 acres) of the allotment, are drought intolerant soils (see Map #4 in Appendix A). The soil survey describes these soils as follows, “Severe drought may adversely affect the production of the perennial vegetation. Partial or total removal of livestock from the range may be necessary” (USDA, 1981). Drought conditions should be assessed on a seasonal basis as annual rainfall totals can be skewed by one or two large storms in late fall or winter.

Biological Soil Crusts:

The biological soil crusts provide healthy nutrient cycling, increasing plant production, which decrease sediment movement and erosion. Biological soil crusts are found within portions of the allotment in association with the pinyon juniper and near rock outcrops. Biological soil crusts are not commonly found on deeper well drained soils with sandy surface textures or the heavy clay and rocky surfaces associated with the Morrison formation.

Utah’s Rangeland Health Standards:

The evaluation conducted on the Monument Wash Allotment found that The Upland Soils Standard was being met for the allotment with the exception of key area 3, which appears to be an old sheep bedding ground that is currently a monoculture of invasive species (see appendix E)

4.0 ENVIRONMENTAL IMPACTS

4.1 Introduction

This chapter analyzes the impacts of the alternatives to Livestock Grazing, Vegetation, and Wildlife (Migratory Birds, Sensitive Species, Fish and Wildlife Excluding USFW Designated Species), and Soils.

The potential consequences or effects of each alternative are discussed in this section. The intent is to provide the scientific and analytical basis for comparison of the effect of each alternative. This section analyzes the impacts of the alternatives to those resources described in Chapter 3, Affected Environment above. A potential impact is defined as any change or alteration in the existing condition of the environment related to implementation of the alternative, either directly or indirectly. Impacts can be beneficial to the resource (positive) or adverse (negative) and can be either long-term (permanent) or short-term (incidental and/or temporary).

4.2.1 Alternative A – Proposed Action

4.2.1.1 Livestock Grazing

The proposed action would implement a rotation grazing management system which would rest at least 50 percent of the allotment during the spring every year. “When properly applied, grazing management systems are powerful tools that can help rangeland and livestock managers achieve management objectives related to range-land and livestock production.” (Howery, Sprinkle, and Bowns, 2000). Perennial grasses vary in sensitivity to utilization, but a majority of them sustain little damage if grazing stops in time for them to complete seed maturation (Heady and Child, 1994).

The timing of grazing can have a significant impact on plant productivity and vigor, especially if livestock are repeatedly present during plant growth and reproductive stages (McGinty, Baldwin, and Banner 2009). These stages occur in the spring for shrubs and cool season grasses. If grazing is properly managed during the spring, plants can build their root systems and increase nutrient storage. The result is more robust plants which are more likely to survive and increase overall forage production (McGinty, Baldwin, and Banner 2009).

The implementation of a grazing management system which rests at least 50 percent of the allotment each year during the spring would continue to maintain and improve the vigor and productivity of the forage plants on the Monument Wash Allotment because at least 50 percent of the allotment would be rested during spring, which as stated above is a critical time for plant growth, reproduction, and nutrient storage. Rotational systems schematically rotate cattle through a series of pastures during a calendar period. In theory, this type of system should provide a period of rest, recovery, and re-growth of grazed plants.” (Encinias and Smallidge, 2010).

Spring rest would allow plants that were grazed during the Fall and Winter the opportunity to regrow from stored carbohydrates which would maintain sufficient residual vegetation and litter on upland sites to protect the soil from wind and water erosion and support ecological functions with no grazing pressure. The implementation of a grazing management system which allows

spring rest would ensure that plants are able to store enough carbohydrates to meet the physiological requirements of desired plants and facilitate reproduction and maintenance of desired plants to the extent natural conditions allow.

The proposed action includes terms and conditions that require the permittee to maintain all range improvements on the allotment. Priority would be given to improvements that are critical to make the grazing management system work.

The proposed action would maintain a productive ranching operation by managing the Monument Wash Allotment for long term sustainability and would continue the use of a renewable resource for food production. To make the grazing management system succeed, range improvements such as fences and water developments may have to be either constructed or repaired and maintained, to ensure that cattle would not have access to the areas in the allotment that are being rested.

4.2.1.2 Vegetation

Plants use water and carbon dioxide in the presence of sunlight to create carbohydrates and oxygen (a process called photosynthesis). Plants use carbohydrates as an energy source for growth. When plant growth slows and more carbohydrates are produced than needed for growth, the surplus carbohydrates are stored. These reserves are important for the plant's survival over winter and for initiation of plant growth in spring. Regrowth after grazing depends on energy being produced either by the remaining leaf area, or from the carbohydrate reserves. (Ontario Ministry of Agriculture and Food. Publication 19, Pasture Production)

Plant growth starts slowly in the spring. Carbohydrate reserves stored in stem bases, roots, rhizomes and stolons have to be mobilized before they can be used to fuel growth. Once leaf area develops, growth quickens as the plant has an immediate source of energy from photosynthesis. After this vegetative period of fast growth is over, the plant becomes reproductive, growth slows and carbohydrate reserves are replenished. (Ontario Ministry of Agriculture and Food. Publication 19, Pasture Production)

Grazed plants left with enough leaf area to continue photosynthesizing regrow at a quicker rate, as they are not dependent on carbohydrate reserves. Plants frequently closely grazed can be damaged because they are unable to restore their carbohydrate reserves. With each defoliation, the plant's reserves are reduced and with time, depleted. In addition, any intensity of grazing causes plant root damage, root weight, length and vigor are reduced. The extent of the damage increases with the severity of the defoliation. (Ontario Ministry of Agriculture and Food. Publication 19, Pasture Production 2000)

Numerous benefits to the vegetation communities of the Monument Wash Allotment are incorporated into the proposed action. At least 50 percent of the allotment would be rested during the critical spring growing season every year (March 7 through May 15). The benefits of spring rest to the vegetative communities would include rest for the grasses, forbs and shrubs.

Throughout the allotment, the benefits of spring rest include; forage production, seed production, good plant vigor, aid in seed dispersal and establishment of young plants.

Perennial grasses vary in sensitivity to utilization, but a majority of them sustain little damage if grazing stops in time for them to complete seed maturation (Heady and Child 1994). The proposed action includes a term and condition that would limit utilization to moderate levels (40 to 60 percent). Based on history of grazing in this allotment and current rangeland health conditions, this level of utilization is expected to continue to benefit desired plant species and maintain rangeland health.

The timing of grazing can have a significant impact on plant productivity and vigor, especially if livestock are repeatedly present during plant growth and reproductive stages (McGinty, Baldwin, and Banner 2009) which occur in the spring for shrubs and cool season grasses. If grazing is properly managed during the spring, plants can build their root systems and increase nutrient storage. The result is more robust plants which are more likely to survive and increase overall forage production (McGinty, Baldwin, and Banner 2009).

Limiting spring grazing would help to maintain the vigor and productivity of the forage plants on the Monument Wash Allotment because at least 50 percent of the allotment would be rested during the critical spring growing season every year (March 7 through May 15), which as stated above is a critical time for plant growth, reproduction, and nutrient storage. Limited livestock grazing in the spring would allow plants to maintain the necessary protection to continue to be in compliance with the Grazing Guidelines

Implementation of a grazing system that allows at least 50 percent of the Monument Wash Allotment spring rest continue to keep the allotment meeting rangeland standard 3 (desired species) by improving vigor, reproductive capability, forage production, and composition of desired species.

Although standard 3 (desired species) is being met, there are some key areas that had a lower amount of desired species than others. These key areas have not reached a level of change from what is expected that makes them not meeting standard 3 and implementation of a grazing system that allows at least 50 percent of the Monument Wash Allotment spring rest would increase the potential for these key areas to continue to improve and to keep the allotment meeting the standard, by improving vigor, reproductive capability, forage production, and composition of desired species.

4.2.1.3 Wildlife (Migratory Birds, Sensitive Species, Fish and Wildlife)

Currently the entire Monument Wash Allotment is available for grazing from November 16 through May 15. The proposed action is developed to limit spring grazing in at least 50% or more of the allotment each year through an AMP that will rotate spring use for through three pastures for approximately 60 days per year in each area therefore spring grazing would not occur every year on two out of three pastures. As discussed in the Vegetation Section above, the

timing of grazing can have a significant impact on plant productivity and vigor. If grazing is properly managed during the spring the result is more robust plants which are more likely to survive and increase overall forage production. The proposed action will ensure vigor and productivity of the forage plants and vegetative cover in the Monument Wash Allotment will improve.

Utah BLM Sensitive Species

Two Utah Sensitive mammal species (white-tailed prairie dog and kit fox) and three sensitive raptor species may or are known to inhabit the Monument Allotment.

The ecological condition of the range directly affects the quality and quantity of the vegetative communities that support the wildlife in the allotment. The AMP in the proposed action would facilitate rangeland health improvements by providing a grazing management system that incorporates spring rest. The goal of the grazing management strategy is to create use areas and/or pastures that would allow a grazing management system which would include spring rest for at least 50 percent of the allotment each year. The entire allotment has known occupancy and potential habitats for the white-tailed prairie dog, kit fox, burrowing owl and ferruginous hawk and winter use by the bald eagle. As range conditions improve, the density and diversity of these vegetative communities would also be expected to improve. Increased plant density offers improved thermal protective cover for both prey and predator terrestrial species and a greater forage base for prey species. Improved plant diversity increases forage opportunities and develops greater opportunities for diversifications in ecological niches thus allowing for enhanced species diversity.

Prairie dogs forage almost solely on plant matter, while kit fox and burrowing owls feed on smaller mammals, insects and birds. Ferruginous hawks, eagles and other raptors feed on small mammals, birds and rodents. Insects are an important food source to kit fox and borrowing owls. Improved vegetative condition and plant cover would provide a forage base for prairie dogs, small mammals and rodents while offering forage and cover for insects, which in turn would provide prey base for kit fox and other predator species and for raptors such as ferruginous hawks and eagles.

Ferruginous Hawks

Ferruginous hawks are known to nest in this allotment, though nest sites are typically elevated sites, cliffs, buttes, and creek banks, therefore it is not expected that grazing activities would impact nest sites. Nesting success is reliant on the availability of small mammals and prairie dogs. As noted above the AMP in the proposed action would continue to support good range conditions through spring rest and moderate utilization. As range conditions improve, the density and diversity of these vegetative communities would also be expected to improve, further providing greater cover and forage base for small mammals and prairie dogs.

Burrowing Owls

Burrowing owls are known to nest in this allotment typically in abandon prairie dog burrows from March 1 through August 31. Grazing could occur in the vicinity of nesting owls in the spring when eggs and young owls are present. There is potential for cattle to impact nest burrows, especially near stock pond and watering areas where cattle congregate.

Nesting success is reliant on nest burrow availability and the availability of small mammals, insects and birds for forage. As noted above the AMP in the proposed action would continue to support good range conditions and as range conditions improve, the density and diversity of these vegetative communities would also be expected to improve further providing a greater forage base for small mammals' insects and birds.

Additionally, the U. S. Wildlife Service indicates that burrowing owls prefer grasslands moderately or heavily grazed by cattle or prairie dogs ([James and Seabloom 1968, Butts 1973, Wedgwood 1976, MacCracken et al. 1985, Bock et al. 1993] Klute et al. 2003). Optimal breeding habitat in portions of Colorado, Montana, Nebraska, North Dakota, South Dakota, and Wyoming occurred in heavily grazed areas with aridic ustoll soils and grazed areas with typic boroll soils (Klute et al. 2003 [Kantrud and Kologiski 1982] Klute et al. 2003). Though spring rest would ensure adequate prey base habitat, continuation of grazing throughout the allotment would facilitate adequate suitable burrowing owl nesting habitat.

Prairie dogs

As recommended by the White-tailed Prairie Dog Conservation Assessment (Seglund 2004), the proposed AMP has developed grazing management practices that consider the season, duration, distribution, frequency and intensity of grazing use within the allotment to maintain sufficient vegetation on both upland and riparian sites to protect the soil from wind and water erosion. As noted above the AMP in the proposed action would continue to support good range conditions by providing spring rest and moderate utilization.

Kit Fox

As noted above, the AMP in the proposed action would continue to support good range conditions through spring rest and moderate utilization. As range conditions improve, the density and diversity of these vegetative communities would also be expected to improve, further providing greater cover and forage base for kit fox prey base.

Though no new water developments are proposed, existing water developments and water haul sights may impact kit fox. Water developments in arid desert environments have been identified as creating negative influence to kit fox by enabling coyotes to expand distribution into arid landscapes under the assumption that water-dependent competitors would occur more frequently in areas near free water and would spatially and/or temporally displace arid-adapted subordinate competitors.

Previous work has demonstrated that removal of coyotes did not influence survival of kit foxes, indicating that coyote-induced mortality may be compensatory and that other factors affect population dynamics of kit foxes, such as prey availability. (Cypher & Scrivber 1992, Dennis & Otten 2000).

In the recently available study ‘Water Developments and Canids in Two North American Deserts: A Test of the Indirect Effect of Water Hypothesis’ done on the United States Army Dugway Proving Ground in west-central Utah, approved and sanctioned by the United States Department of Defense and the Utah Division of Wildlife Resources, found that the intensity of visitation to water developments by kit foxes in Mojave indicates that arid-adapted species may use water developments more frequently than previously believed. The frequent visitation to free water by kit foxes in Mojave suggests that water developments may be more beneficial to this species than what has been previously understood. (Simpson et al 2011).

Additionally, the results of the study did not find any support for the assertion that free water played a negative indirect role on kit foxes but rather indicated that factor(s) other than the presence or distribution of free water were associated with occurrence of coyotes. (Hall et al., 2013). Therefore the various livestock water developments found throughout this allotment is not expected to limit potential kit fox habitat or occupancy.

Migratory Birds and Raptors

A variety of migratory bird and raptor species, including two Utah Partners in Flight (UPIF) priority species and four sensitive raptor species, may use the allotment for breeding, nesting, foraging and migratory habitats. The ecological condition of the range directly affects the quality and quantity of the vegetative communities that support migratory birds. As discussed in the sensitive species section above, the AMP in the proposed action alternative for the Monument Wash Allotment would continue to support good range conditions. As range conditions improve, the density and diversity of these vegetative communities would also be expected to improve. Increased plant density offers improved thermal protective cover, nesting opportunity and an increased forage and prey base. Improved plant diversity increases forage opportunities and develops greater opportunities for diversifications in ecological niches, thus allowing for enhanced species diversity.

Shrubsteppe and high desert scrub provides nesting and foraging habitats for Brewer’s sparrow and sage sparrow and offers habitat to small mammals and insects that provide a prey base for golden eagles burrowing owls and other raptors. Stable or improving range conditions facilitate greater density and diversity of these vegetative communities thus ensuring these species and other migratory bird species have suitable habitats for nesting and foraging in this allotment.

The allotment would be managed to achieve the objectives described in the Utah’s Rangeland Health Standards, including maintaining desired species “at a level appropriate for the site and species involved”. Additionally, riparian areas would be managed in accordance with the Utah BLM Riparian Policy for Proper Functioning Condition. Riparian areas offer high quality breeding and foraging habitat to migratory birds due to the diversity and density of vegetation and insect prey.

Livestock may be in the area and have direct contact with breeding and nesting migratory birds during the first two weeks of migratory birds nesting season (typically May 1 – July 31) and the

first three months of the raptor nesting season (typically March 1 – August 31) in pastures where spring grazing is occurring on a given year. Direct contact with cattle could result in migratory birds moving to another area lacking cattle activities to nest. Nesting success of nesting birds could be directly affected by trampling nests sites located on the ground or in low shrub substrate, resulting in loss of eggs or possibly nestlings. Many birds are unsuccessful in their first nesting attempt, so re-nesting is often a very important way for birds to increase their lifetime fitness and for populations to maintain stable numbers (Bollinger 2001), therefore overall migratory bird populations within the allotment are not expected to be impacted or reduced as a result of this limited seasonal overlap. Most raptors found in this area nest on ledges, elevated topography or in taller trees therefore direct nest impacts are not expected.

The proposed action would maintain good range condition in the allotment and help to improve range and ecological condition in the Monument Wash Allotment, more than the no action Alternative, thus benefiting migratory birds and raptors.

General Wildlife

Animals such as small mammals, reptiles, songbirds and insects rely on the cover and forage provided by the vegetative community they inhabit. This vegetative community offers forage and cover in the forms of leaves, stems, roots, seeds, pollen, canopy cover and duff for various animals and insects. Predator species such as mountain lions, coyotes, fox, badgers, birds and raptors are dependent upon the quantity and quality of their prey base, which is typically smaller mammals, reptiles, songbirds and insects that are reliant on the vegetative base. The ecological condition of the range directly affects the quality and quantity of the vegetative communities that support the wildlife in the allotment. The AMP in the proposed action alternative would continue to support good range conditions by requiring spring rest in alternating pastures at a minimum of every other year and removing grazing within the riparian area. The development and implementation of the AMP in the proposed action would encourage range condition improvements. As range conditions improve, the density and diversity of these vegetative communities would also be expected to improve. Increased plant density offers improved thermal protective cover for both prey and predator species and a greater forage base for prey species. Improve plant diversity increases forage opportunities and develops greater opportunities for diversification in ecological niches, thus allowing for enhanced species diversity.

Pronghorn Antelope Habitat

On a year round basis, forage and space competition between antelope and cattle is relatively low, as their dietary overlap is less than 30 percent and aggressive behavior between cattle and pronghorn appears to be minimal (Roebuck 1982). There are generalized tabulations over many different habitats that consistently depict a low rate of dietary overlap, therefore, on a year-round basis, competition is relatively low between cattle and pronghorn because of the consumption of different forage classes by the two species (Autenrieth et al 2006).

Livestock utilizing pronghorn habitat in the spring prior and during fawning can cause competition for space resulting in does moving to sites with less desirable vegetative height. This may result in higher predation on the newborn fawns. Spring forbs and grass are important to female antelope prior to and during fawning. Forage competition between livestock and antelope for early spring forbs and grass can result in low fawn survival rates due to both nutritional and predation factors (Autenrieth et al 2006). Fawning season is from May 1 through June 30. Cattle are removed from the allotment by May 15; therefore the competition for space and forage would only be during the first 15 days of fawning season and only one pasture annually.

The proposed action's grazing schedule developed in the AMP would benefit antelope and their habitats more than the no action Alternative, as it reduces grazing pressures and offers spring rest in at least half of the allotment every year. This would allow for improved annual early spring forb and grass growth, recruitment, vegetative density and plant height, plus eliminates any space competition from cattle during fawning.

At least half of the allotment would provide suitable antelope fawning habitat and could be readily utilized by antelope that may be impacted by spring grazing in other areas of the allotment. Therefore, sufficient and suitable fawning habitats for local populations of antelope would be available.

The proposed action may construct a fence in five years after authorization of the permit renewal. All fences would be constructed outside of the fawning period and would be designed to allow for antelope passage and therefore would not impede antelope movement.

4.2.1.4 Utah BLM Sensitive Plant Species

Entrada rushpink

The Entrada rushpink has habitat within the allotment. There are no known populations of plants within this allotment. The AMP in the proposed action would provide a grazing management system in which at least 50 percent of the allotment would be rested during the critical spring growing season every year (March 7 through May 15). As discussed in the Vegetation Section the timing of grazing can have a significant impact on plants productivity and vigor. If grazing is properly managed during the spring the result would be more robust Entrada rushpink plants which are more likely to survive and increase overall number of plants.

4.2.1.5 Soils

The proposed action has potential for reduced impacts to overall soil conditions throughout the allotment, with fewer impacts than the no action alternative. With the proposed grazing system, each pasture would be grazed at a different time of year every year. Every pasture is grazed at some time every year. This is less impacting than the no action alternative where the pastures are grazed at the same time of year each year, with no pasture rotation.

Limiting grazing in the spring would allow upland soils the protection necessary to continue to meet Utah's Rangeland Health Standard #1. Implementation of the proposed grazing system would increase vegetative cover and litter which protect the soil surface from excessive water and wind erosion by increasing infiltration and soil moisture conditions (Lusby, 1963).

Dust blowout areas:

This alternative is less impacting to soils within the dust blowout area than the no action alternative. With a pasture rotation system areas impacted by past drought and intense grazing use would increase in vegetative cover and soil stability, reducing the dust generation at these sites.

Soils adversely affected by drought:

This alternative is less impacting to drought sensitive soils than the no action alternative. With a pasture rotation system, the increase in vegetative cover would increase soil and plant resiliency and reduce impacts during droughts.

Moderately saline soils:

Natural erosion rates of saline soils are accelerated by surface disturbances. According to Lusby, 1963, "rest from grazing during ...Feb 15 to May 15 allows soils to go partially through the annual change cycles of freezing/ thawing ... and developing the popcorn surface appearance". This reduces the potential for wind and water erosion, increases infiltration rates, and reduces compaction. When soil erosion and compaction are kept to a minimum, the loading of salinity, selenium and sediment are minimized as well as maintaining overall soil health conditions.

The spring season is defined in the proposed action as March 7 through May 15. In year 1 the East pasture is used in the spring (March 7 to May 15) while the West pasture is rested. In year 2 the West pasture is used in the spring (March 7 to May 15) while the East pasture is rested.

This is less impacting than the no action alternative where the pastures are grazed at the same time of year each year, with no pasture rotation. Every other year pastures with moderately saline soils would be rested in the spring, reducing the potential for accelerated wind and water erosion, increasing infiltration rates, reducing compaction, increasing overall soil health and reducing salinity and selenium loading to the Colorado River Basin.

Soils with high wind erosion potential:

Soils are most susceptible to wind erosion in the spring (April – June) during the heavy wind period in this area of the Colorado Plateau. Early spring rains can help reform physical crusts that may help stabilize the soil surface if the soils are undisturbed following storm events.

This alternative is less impacting to soils with high wind erosion potentials than the no action alternative because with the implementation of a pasture rotation system, vegetative ground cover should increase which would help to stabilize soils and reduce erosion.

Biotic Soil Crusts:

This alternative is less impacting to biotic soil crusts than the no action alternative. With a pasture rotation system there should be a decrease in soil compaction and an increase in vegetative cover and soil stability, improving overall soil health conditions as well as biotic soil crust conditions.

4.2.1.6 Mitigation Measures

None

4.2.1.7 Monitoring and/or Compliance

Monitoring in the Moab Field Office is conducted following the Draft Utah Monitoring Manual for Upland Rangelands. The Monument Wash Allotment has been converted to nested frequency and line point intercept for long term trend monitoring.

4.2.2 Alternative B – Change the Season of Use to Exclude Spring Grazing

4.2.2.1 Livestock Grazing

This alternative would require the permittee to adjust the management of his ranching operation. There would be an economic impact to the permittee, who would have to find alternate spring grazing, reduce livestock numbers, or feed the cattle on their private land. The loss of spring grazing on the Monument Wash Allotment may make the costs of grazing on the allotment outweigh the benefits to the permittee's ranching operation, which may make the operation unviable.

4.2.2.2 Vegetation

Spring grazing would not occur on the allotment, which would completely rest the allotment every spring during the critical time of growth and reproduction for plants. Currently the allotment is meeting Standard 3 (Desired Species). The proposed action also includes spring rest by restricting cattle to 50 percent of the allotment during the spring and alternating the areas being grazed each spring. Refer to section 4.2.1.1, and 4.2.1.2 for analysis of the benefits of not grazing vegetation during the spring. The advantage that this alternative has over the proposed action and the no action alternative is that this alternative has greater potential for quicker improvement of desired species.

4.2.2.3 Wildlife (Migratory Birds, Sensitive Species, Fish and Wildlife Excluding USFW Designated Species)

Currently the entire Monument Wash Allotment is available for grazing from November 15 through May 15. Alternative B is designed to change the season of use to exclude spring grazing. As discussed in the Vegetation Section for the proposed action, the timing of grazing

can have a significant impact on plant productivity and vigor. Alternative B would further insure vigor and productivity of the forage plants and vegetative cover in the Monument Wash Allotment, as plants would not be subjected to cattle grazing during the spring when most plants are actively growing, blooming and developing seeds. This increase in vigor and productivity would lead to greater vegetative density and diversity resulting in increased cover, structure and forage for wildlife. Alternative B would eliminate cattle use during the spring when most wildlife species give birth and raise their young. Therefore no competition for space and forage would occur between wildlife and cattle.

Utah BLM Sensitive Species

Under this alternative all pastures would be rested during the spring. Compared to the proposed action and the no action alternatives, this alternative has greater potential to benefit vegetative cover and diversity, as grazing would be removed prior to the majority of the spring growing season, potentially increasing plant vigor of plant species and cool season plants. Improved ecological conditions of the range would directly affect the quality and quantity of the vegetative communities that supports the Utah Sensitive species. Improved ecological conditions further improve thermal protective cover for both prey and predator species and a greater forage base for prey species. Improved plant diversity increases forage opportunities and develops greater opportunities for diversifications in ecological niches thus allowing for enhanced species diversity.

Ferruginous Hawks

Ferruginous hawks are known to nest in this allotment, though nest sites are typically elevated sites, cliffs, buttes, and creek banks, therefore it is not expected that grazing activities would directly impact nest sites. The removal of spring grazing would further improve range conditions and the density and diversity of these vegetative communities providing greater cover and forage base for small mammals and prairie dogs than the proposed action.

Burrowing Owls

Burrowing owls are known to nest in in this allotment typically in in abandon prairie dog burrows from March 1 through August 31. The removal of spring grazing would eliminate the potential for cattle to impact nest burrows.

Nesting success is reliant on nest burrow availability and the availability of small mammals, insects and birds for forage. The removal of spring grazing would further improve range conditions and the density and diversity of these vegetative communities providing greater cover and forage base for prey species such as small mammals' insects and birds than proposed action.

As noted above, the U. S. Wildlife Service indicates that burrowing owls prefer grasslands moderately or heavily grazed by cattle or prairie dogs ([James and Seabloom 1968, Butts 1973, Wedgwood 1976, MacCracken et al. 1985, Bock et al. 1993] Klute et al. 2003). Optimal breeding habitat in portions of Colorado, Montana, Nebraska, North Dakota, South Dakota, and

Wyoming occurred in heavily grazed areas with aridic ustoll soils and grazed areas with typic boroll soils (Klute et al. 2003 [Kantrud and Kologiski 1982] Klute et al. 2003). . The removal of spring grazing would ensure adequate prey base habitat and the continuation of fall and winter grazing throughout the allotment would adequately facilitate adequate suitable burrowing owl nesting habitat.

Prairie dogs

As recommended by the White-tailed Prairie Dog Conservation Assessment (Seglund 2004), this alternative has developed grazing management practices that removes spring and would maintain sufficient vegetation on both upland and riparian sites to protect the soil from wind and water erosion.

Kit Fox

The removal of spring grazing would further improve range conditions and the density and diversity of these vegetative communities providing greater cover and forage base for kit fox prey base than Proposed action.

Though no new water developments are proposed in this alternative, existing water development and water haul sights may impact kit fox. Though no new water developments are proposed in this alternative, existing water development and water haul sights may impact kit fox. Impacts are expected to be similar as discussed in Proposed action.

Migratory Birds and Raptors

As discussed in section 4.2.1.3, a variety of migratory bird, raptor species and sensitive raptor species may utilize this allotment.

Under this alternative all pastures would be rested during the spring as discussed in the sensitive species section above and this alternative would further improve range conditions more than the Proposed action and the no action. Improving the density and diversity of these vegetative communities and developing greater opportunities for diversifications in ecological niches would enhance species diversity and density. Livestock would not have any direct contact with breeding and nesting migratory birds or raptors as cattle would be removed from the range prior to migratory birds nesting season (typically May 1 – July 31) and raptor nesting season (typically March 1 – August 31).

General Wildlife

As discussed in section 4.2.1.3, animals rely on the cover and forage provided by the vegetative community they inhabit. Under this alternative all pastures would be rested during the spring. Compared to the proposed action and the no action alternatives, this alternative has greater potential to benefit vegetative cover and diversity that supports local wildlife species. Greater plant density offers improved thermal protective cover for both prey and predator species and a greater forage base for prey species. Improve plant diversity increases forage opportunities and

develops greater opportunities for diversification in ecological niches, thus allowing for enhanced species diversity.

Pronghorn Antelope Habitat

As discussed in section 4.2.1.3 livestock utilizing pronghorn habitat in the spring prior and during fawning can cause low fawn survival rates due to both nutritional and predation factors. This alternative would eliminate spring grazing, therefore competition for space and forage would be eliminated. Antelope would benefit more from this alternative than from the proposed action and no action alternative, as grazing pressures during the spring are eliminated.

Under this alternative there would be no need for a pasture fence therefore antelope passage would not be impeded.

Overall, alternative B would improve and sustain good range condition in the allotment and help to improve range and ecological condition in the allotment, more than the proposed action and the no action alternatives, thus benefiting Utah sensitive species, migratory birds, raptors, pronghorn and general wildlife.

4.2.2.4 Utah BLM Sensitive Plant Species

Entrada rushpink

At the present time there are no known populations of this sensitive plant species within this allotment. Most of the habitat for this sensitive plant species is in areas suitable for livestock grazing. This species is palatable to cattle. No spring grazing would help with the survival of the Entrada rushpink because there would be no grazing when most plants are actively growing, flowering and developing seeds. In addition grazing during the fall and winter when plants are dormant would not impact this forb.

4.2.2.5 Soils

This alternative calls for a shorter season of use. Each pasture is grazed every year, but for a shorter duration and only in the fall and winter months. This alternative has a higher potential to positively benefit the overall condition of soils in the allotment than the proposed action or the no action alternative.

Dust blowout areas:

This alternative is less impacting to soils within the dust blowout areas than the proposed action or the no action alternative. With no spring grazing there is potential for the vegetative cover and soil stability to improve at a quicker rate than the proposed action or the no action alternatives by reducing the dust generation at the dust blowout areas.

Soils adversely affected by drought:

This alternative is less impacting to drought sensitive soils than the proposed action or the no action alternative. With no spring grazing there is potential for the vegetative cover and soil stability to improve at a quicker rate than the proposed action which would reduce impacts during droughts.

Moderately saline soils:

Natural erosion rates of saline soils are accelerated by surface disturbances. According to Lusby, 1963, “rest from grazing during ...Feb 15 to May 15 allows soils to go partially through the annual change cycles of freezing/ thawing ... and developing the popcorn surface appearance”. This reduces the potential for wind and water erosion, increases infiltration rates, and reduces compaction. When soil erosion and compaction are kept to a minimum, the loading of salinity, selenium and sediment are minimized as well as maintaining overall soil health conditions.

The spring season is defined in the proposed action as March 7 through May 15. This is less impacting than the no action alternative where the pastures are grazed at the same time of year each year. Every year pastures with moderately saline soils would be rested in the spring, reducing the potential for accelerated wind and water erosion, increasing infiltration rates, reducing compaction, increasing overall soil health and reducing salinity and selenium loading to the Colorado River Basin.

Soils with high wind erosion potential:

Soils are most susceptible to wind erosion in the spring (April – June) during the heavy wind period in this area of the Colorado Plateau. Early spring rains can help reform physical crusts that may help stabilize the soil surface if the soils are undisturbed following storm events.

This alternative is less impacting to soils with high wind erosion potentials than the no action alternative. No spring grazing has the potential for vegetative cover and soil stability to improve at a quicker rate than the proposed action or the no action alternative which would help to stabilize soils and reduce erosion.

Biotic Soil Crusts:

This alternative is less impacting to biotic soil crusts within the dust blowout areas than the proposed action or the no action alternative. With no spring grazing there is potential for a decrease in soil compaction and an increase in vegetative cover and soil stability, improving overall soil health conditions as well as biotic soil crust conditions.

4.2.2.6 Mitigation Measures

None

4.2.2.7 Monitoring and/or Compliance

Same as Proposed action.

4.2.3 Alternative C – No Action (Continuation of Current Permit Terms)

4.2.3.1 Livestock Grazing

This alternative would not implement a grazing system that allows for spring rest. The trend of the allotment may decline or continue to be static. As the quality and quantity of forage declines the livestock operation would have to adjust by reducing their stocking rate and/or changing the season of use on the allotment. There are potential negative impacts for long term sustainability of livestock grazing.

4.2.3.2 Vegetation

The no action alternative would negatively impact the vegetation within the allotment by not allowing for a management system that includes periodic spring rest. The potential negative impacts to vegetation would include a reduction in desired species and an increase in non-native invasive species.

4.2.3.3 Wildlife (Migratory Birds, Sensitive Species, Fish and Wildlife Excluding USFW Designated Species)

Currently the entire Monument Wash Allotment is available for grazing from November 16 through May 15. The no action alternative would continue this use. The no action alternative would not facilitate the improvements in vigor and productivity of the forage plants and vegetative cover in the Monument Wash Allotment, as plants would be subjected to cattle grazing season long.

Utah BLM Sensitive Species

The no action alternative would not allow for a grazing management system. As discussed in the vegetation section, there is a potential to negatively impact the vegetation as the alternative does not allow for any spring rest and may affect the cool season vegetation, decreasing cover. There could also be direct conflicts and competition between nesting raptors during nesting season and denning fox and prairie dogs during the pupping season. Therefore the no action alternative would benefit sensitive species less than the proposed action and alternative B (no spring grazing). The no action alternative would have the greatest negative impacts to these habitats.

Migratory Birds and Raptors

The no action alternative would not allow for grazing management system. There is a potential to negatively impact the vegetation as the alternative does not allow for early spring rest and may affect the cool season vegetation, decreasing cover. The insect base may also be decreased. Livestock may have any direct contact breeding and nesting season migratory birds during the first two weeks of migratory birds nesting season (typically May 1 – July 31) and the first three

months of the raptor nesting season (typically March 1 – August 31. Therefore the no action alternative would benefit migratory birds less than the proposed action and alternative B (no spring grazing). The no action alternative would have the greatest negative impacts to these migratory bird and raptor habitats.

General Wildlife

The no action alternative would not allow for rest/rotation. As discussed in the vegetation section there is a potential to negatively impact the vegetation as this alternative does not allow for spring rest and may affect the cool season vegetation, decreasing cover. For reasons discussed in above sections the no action alternative would benefit wildlife less than the proposed action alternative B. the no action alternative would have the greatest negative impacts to these habitats.

Pronghorn Antelope Habitat

Antelope would not benefit from the action alternative as grazing pressures would occur every year throughout the allotment. Annual early spring forb and grass growth, recruitment, vegetative density and plant height could be greatly reduced and there would be space competition from cattle during fawning. Under this alternative there would be no need to fence livestock pastures therefore antelope passage would not be impeded. Therefore the no action alternative would benefit antelope and their habitats less than the proposed action and alternative B (no spring grazing). Alternative C may have the greatest negative impacts to this habitat.

Overall, Alternative C would have the least potential to improve range and ecological conditions in the Monument Wash Allotment, less than the proposed action and alternative B (no spring grazing), thus providing the least benefits to Utah sensitive species, migratory birds, raptors, pronghorn and general wildlife.

4.2.3.4 Utah BLM Sensitive Plant Species

Entrada rushpink

The Entrada rushpink may inhabit the Monument Wash allotment. There are no known populations of this species within the allotment. The no action alternative would not facilitate the improvements in vigor and productivity within the grazable portions of the habitat in the Monument Wash Allotment, as plants would be subjected to cattle grazing in fall, winter and spring months throughout the allotment. As discussed in the Vegetation Section for the Proposed Action, the timing of grazing can have a significant impact on plant productivity and vigor. Cattle grazing would occur during the critical spring months (April 1 to May 15) and during the green up, flowering period, and seed production within the Entrada rushpink habitat. This alternative would have the greatest potential to impact the Entrada rushpink habitat out of the other alternatives.

4.2.3.5 Soils

This alternative has the highest potential for negative impacts to the condition of soils in the allotment.

Dust blowout areas:

This alternative is the most impacting to soils within the dust blowout areas of all the alternatives. With no pasture rotation the vegetative cover and soil stability conditions would remain the same or may decline, increasing dust generation at these sites.

Soils adversely affected by drought:

This alternative is the most impacting to soils adversely affected by drought. With no pasture rotation, the vegetative cover would stay the same or may decline, reducing soil and plant resiliency and increasing impacts during droughts.

Moderately saline soils:

This alternative has the highest potential for negative impacts due to the potential for accelerated rates of wind and water erosion, reduced infiltration rates, decreased overall soil health conditions and accelerated salinity and selenium loading to the Colorado River Basin. Salinity and sediment loading to the Colorado River Basin would continue at current levels and may increase.

Soils with high wind erosion potential:

With no pasture rotation, vegetation and overall ground cover may not increase which affects soil stability and erosion rates. This alternative is the most impacting to soils with moderate to high wind erosion.

Biotic Soil Crusts:

This alternative is the most impacting to biotic soil crusts within the dust blowout areas of all the alternatives. With no pasture rotation the soil compaction, vegetative cover and soil stability conditions would remain the same or may decline, impacting overall soil health conditions as well as biotic soil crust conditions.

4.2.3.6 Mitigation Measures

None

4.2.3.7 Monitoring and/or Compliance

Same as Proposed action.

4.3 Cumulative Impacts Analysis

Federal Regulations at 40 CFR 1508.7, define a cumulative impact as: "...the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time." The following sections describe past, present and reasonably foreseeable actions in the vicinity of the proposed project.

4.3.1 Livestock Grazing, Vegetation and Soils

The cumulative impact area (CIA) of analysis for livestock grazing, vegetation and soil resources is the Monument Wash Allotment boundary because it is the area where livestock grazing would be authorized under the grazing permit; topographic features and fencing limit the influence that livestock would have beyond the allotment boundary. The timeframe for analysis of cumulative impacts is 10 years because that is the length of time that the grazing permit would authorize grazing. After 10 years the area would be evaluated again to determine if it is appropriate to issue another permit and what management changes may be necessary.

Past, present and reasonably foreseeable actions within the cumulative impact area for livestock grazing, vegetation and soils resources include the activities and actions of livestock grazing, and range improvements, energy and mineral exploration and development, road development and use, wildlife use and habitat improvements, recreation use, and the occurrence of wildland fires.

Livestock grazing has taken place in the CIA for more than the last 100 years. Both cattle and sheep have been grazed in the CIA. Range improvements in the CIA include 4 corrals, 6 cattle guards, 62 water developments (about 0.25 acres each), and approximately 44 miles of fence. It is anticipated that approximately six miles of fencing and 4 to 5 new water reservoirs would be constructed in the Monument Wash Allotment in the reasonably foreseeable future.

The cumulative impacts to vegetation and soils resources from the past, present, and reasonably foreseeable actions include: Changes and loss of vegetation, decreased forage for livestock, and loss of soils from construction activities.

Energy development, mining activity, road construction and use, the construction use of range improvements and livestock grazing have resulted in a loss of vegetation and soil stability. These activities have also led to the introduction of cheatgrass and Russian thistle which are non-native invasive plant species. Recreational activities would be the least impacting within the livestock grazing, vegetation and soils CIA, as use is minimal and these activities typically utilize existing roads. Wildfires remove and alter the vegetative community, expose the soil to wind and water erosion and lead to a reduction in forage for livestock grazing. Improvements

including water developments and pasture fences can improve use of the vegetation, improve forage quality and quantity, and protect the soils from erosion.

The Proposed action and alternative B would allow for spring rest of vegetation which would increase the vigor, density, diversity, quality, and quantity of forage, providing protection of soils from water and wind erosion and therefore would not contribute to the cumulative impacts. The cumulative effect would be the continuation of meeting Utah's Standards for Rangeland Health and Guidelines for Grazing Management by promoting a healthy vegetative community and by better protecting soils from erosion. However, these alternatives would contribute a small amount (less than 5 acres) to the cumulative impacts as a result of proposed range improvements.

4.3.2 Wildlife (Migratory Birds, Sensitive Species, Fish and Wildlife Excluding USFW Designated Species)

The CIA of analysis for wildlife resources (State Sensitive Species and Fish and Wildlife) is the extent of the HUC 12 watersheds and the overlapping antelope habitats that have been identified by the DWR located south of I-70, east of 191 and encompassing approximately 131,980 acres. This area would be used as the Wildlife CIA because it encompasses all habitats for discussed species and general wildlife that have the capacity to move across the terrestrial landscape, represents all vegetative communities that support these species and offers natural (habitat type) and man-made boundaries (Interstate 70 and State Route 191) that would restrict or impede terrestrial movement. The CIA also includes the habitat for many avian species. The wildlife cumulative impact area (Wildlife CIA) overlaps with livestock use in this area and is effected by grazing, energy exploration and development, road development and transportation use, wildlife use and habitat improvements, limited recreation use, limited hunting opportunities, and the other resources. The timeframe for the analysis of cumulative impacts is 10 years because that is the length that the permit would be issued.

Past, present and reasonably foreseeable actions within the CIA for wildlife resources include the activities and actions of energy and mineral exploration and development, road development and use, livestock grazing, and range improvements, wildlife use and habitat improvements, recreation use and the occurrence of wildland fires.

The cumulative effects to wildlife resources from the past, present, and reasonably foreseeable actions include: vegetative alternation, habitat fragmentation, increased human disturbances and the anthropogenic effects on the landscape that alters and impacts the quality, quantity and use of habitat associated with local wildlife species that utilize the Wildlife CIA for breeding, nesting, foraging, year-round use and migration.

Typical energy, mineral and road development and road use have the greatest impacts to wildlife habitats as these activities fragment the landscape, remove and alter the vegetative community and increase human conflicts and disturbances to wildlife populations. Livestock use alters the vegetative community, decreases large ungulate movements and increases spatial and foraging competition between domestic animals and wildlife thus reducing available habitats.

Recreational activities would be the least impacting within the Wildlife CIA, as use is minimal and these activities typically utilize existing roads. Wildfires remove and alter the vegetative community leading to habitat degradation and loss. Habitat improvements including water developments, vegetative treatments and improving wildlife passage through allotment and pasture fences can improve and increase quality, quantity and use of habitat for wildlife.

Proposed action and B would allow for some type of spring rest that would help promote annual early spring forb and grass growth, recruitment, vegetative density, diversity, and reduce spatial competition from cattle during the birthing and nesting season of avian species in some or all areas, therefore reducing the rate of cumulative impacts that are occurring under the grazing management system (no action) that is in place currently.

All alternatives except the no action alternative would allow for increased vegetative growth and decreased spatial competition during the spring in at least two out of five pastures each year, which would result in cumulative improvement of wildlife habitat and therefore reducing the rate of cumulative impacts that are occurring under the current grazing management system (no action).

The no action alternative would continue to contribute to the degradation of vegetative communities that support wildlife habitats due to the lack of spring rest throughout the entire allotment and would continue a decrease in habitat availability due to continued spatial competition throughout the year and during the spring season when birthing and nesting occur, therefore the rate of cumulative impacts that are occurring under the no action alternative would continue to contribute to the cumulative degradation of the vegetative communities and the occurrence of spatial competition.

4.3.3 Utah BLM Sensitive Plant Species

The CIA of analysis for BLM State Sensitive Plant Species within the Monument Wash Allotment boundary because it is the area where livestock grazing would be authorized under the grazing permit; topographic features and fencing limit the influence that livestock would have beyond the allotment boundary. The timeframe for analysis of cumulative impacts is 10 years because that is the length of time that the grazing permit would authorize grazing. After 10 years the area would be evaluated again to determine if it is appropriate to issue another permit and what management changes may be necessary.

Past, present and reasonably foreseeable actions within the cumulative impact area for the BLM state sensitive plant species include mining activity, road use and development within the habitat of these plant species, livestock grazing, range improvements, wildlife use and habitat improvements, recreation use and the occurrence of wild land fires. Which would increase the potential of impacting the given plant species within this allotment.

Typical energy, mineral and road development and road use have the greatest impacts to habitats as these activities fragment the landscape, remove and alter the vegetative communities and

increase human conflicts and disturbances to plant populations. Livestock use may alter the vegetative communities which may have an impact on Entrada rushpink. Recreational activity and mining activity would be the most impacting to habitats and populations within the CIA. Wildfires remove and alter the vegetative communities leading to habitat degradation and loss.

5.0 CONSULTATION AND COORDINATION

5.1 Introduction

The issue identification section of Chapter 1 identifies those issues analyzed in detail in Chapter 4. The ID Team Checklist provides the rationale for issues that were considered but not analyzed further. The issues were identified through the public and agency involvement process described in sections 5.2 and 5.3 below.

5.2 Persons, Groups, and Agencies Consulted

Table 5-1: List of Persons, Groups and Agencies Consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & conclusion
Grazing Authorization number 4306376 – Current Permittee	Consulting with permittees for alternatives and grazing system.	Several meetings were held between the permittee and the BLM to discuss potential management actions needed to be included in the Monument Wash Allotment Management Plan.
Utah State Historic Preservation Office (SHPO)	Consultation for undertakings, as required by the National Historic Preservation Act (NHPA) (16 USC 470)	The BLM sent the SHPO a letter seeking concurrence on a “no effect on historic property determination. On May 12, 2015 SHPO concurred that no archaeological sites and no Historic Properties are Adversely Affected.
Tribal Consultation	Consultation as required by the American Indian Religious Freedom Act of 1978 (42 USC 1531) and NHPA (16 USC 1531)	BLM sent letters to the Hopi, Southern Ute, Ute Mountain Ute, Northern Ute, Zuni, Jemez, and Navajo tribes on 4/21/2016. The Hopi requested further information which the BLM sent. Consultation with the Hopi is ongoing.

5.3 Summary of Public Participation

Posting of notification was made on the Utah BLM ePlanning website in January, 2015 and The current grazing permittee was notified in 2014 of the BLM's intent to evaluate grazing on the Monument Wash Allotment through a NEPA analysis. Initial scoping closed on February 15. See section 1.8 for more detail about scoping.

5.4 List of Preparers

Table 5-2: List of Preparers

Name	Title	Responsible for the Following Section(s) of this
Kim Allison	Range Management Specialist	Livestock, vegetation, soils, maps and team leader
Pamela Riddle	Wildlife Biologist	Wildlife (Migratory Birds, Sensitive Species, Fish and Wildlife Excluding USFW Designated Species)
David Williams	Range Management Specialist	Threatened and Endangered Species and BLM State Sensitive Plant Species

6.0 REFERENCES

6.1 References Cited

Autenrieth R.E, D.E. Brown, J. Cancino, R.M. Lee, R.A. Ockenfels, B.W. O’Gara, T.M. Pojar, and J.D. Yoakum. 2006. Pronghorn manangement: 2006 biological and management principles and practices designed to sustain pronghorn populations from Canada to Mexico. 21st Pronghorn Workshop and North Dakota Game and Fish Department Bismarck, North Dakota.

Cypher BL, Scrivner JH (1992) Coyote control to protect endangered San Joaquin kit foxes at the Naval Petroleum Reserves, California. Proceedings of the Vertebrate Pest Conference 15: 42–47.

Dennis B, Otten MRM (2000) Joint effects of density dependence and rainfall on abundance of San Joaquin kit fox. J Wildl Manag 64: 388–400.

Encinias, Manny and Smallidge, Sam. 2010. Developing a Grazing management system for Arid Climates. Circular 649, New Mexico State University Cooperative Extension Service.

Hall, Lucas K, Randy T. Larsen, Robert N. Knight, Kevin D. Bunnell, and Brock R. McMillan (2013). Water Developments and Canids in Two North American Deserts: A Test of the Indirect Effect of Water Hypothesis. PLoS One. 2013; 8(7): e67800. Published online 2013 July 2. doi: [10.1371/journal.pone.0067800](https://doi.org/10.1371/journal.pone.0067800)

Heady, Harold F. and Child, Dennis R. 1994. *Rangeland Ecology and Management*.

Howery, Larry D., Sprinkle, James E., and Bowns, James E. 2000. A summary of Livestock Grazing management systems Used on Rangeland in the Western United States and Canada. The University of Arizona Cooperative Extension.

Klute, D. S., L. W. Ayers, M. T. Green, W. H. Howe, S. L. Jones, J. A. Shaffer, S. R. Sheffield, and T. S. Zimmerman. 2003. Status Assessment and Conservation Plan for the Western Burrowing Owl in the United States. U.S. Department of Interior, Fish and Wildlife Service, Biological Technical Publication FWS/BTP-R6001-2003, Washington, D.C.

McGinty, Ellie, Baldwin, Ben, and Banner, Roger. 2009. A Review of Livestock Grazing and Range Management in Utah. State of Utah, Governor's Public Lands Policy Coordination Office, page 14.

Ontario Ministry of Agriculture and Food. 2000. *Publication 19, Pasture Production*. Chapter 4.

Parrish, J.R., F.P. Howe, R. E. Norvell. 2002. Utah Partners in Flight Avian Conservation Strategy Version 2.0. Utah Partners in Flight Program, Utah Division of Wildlife Resources, 1594 West North Temple, Salt Lake City, UT 84116

Romin, L. A., and Muck, J.A. 2002. Utah Field Office Guidelines for Raptor Protection From Human and Land Use Disturbances. U.S. Department of the Interior, U.S. Fish and Wildlife Service, Utah Field Office, Salt Lake City, Utah.

Roebuck, C.M. 1982. Comparative food habits and range use of pronghorn and cattle in the Texas Panhandle. Thesis, Texas Technical University, Lubbock, Texas, USA.

Seglund, A.E., A.E. Ernst, M. Grenier, B. Luce, A. Puchniak and P. Schnurr. 2004. White-tailed Prairie Dog Conservation Assessment.

Simpson NS, Stewart KM, Bleich VC (2011) What have we learned about water developments for wildlife? Not enough! Calif Fish Game 97: 190–209.

Utah Division of Wildlife Resources (UDWR), 2015. Utah Conservation Data CenterUDWR, assessed July 2015. <http://dwrcdc.nr.utah.gov/ucdc/>
Utah Division of Wildlife Resources (UDWR). 2007. Proposed Utah species of concern list, State of Utah Department of Natural Resources.

USDI Bureau of Land Management 2008, Moab Field Office Resource Area Management Plan

U.S. Fish and Wildlife Service (USFWS). 2008 Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, Virginia 85 pp.

BLM Documents (Available for review at the Moab Field Office):

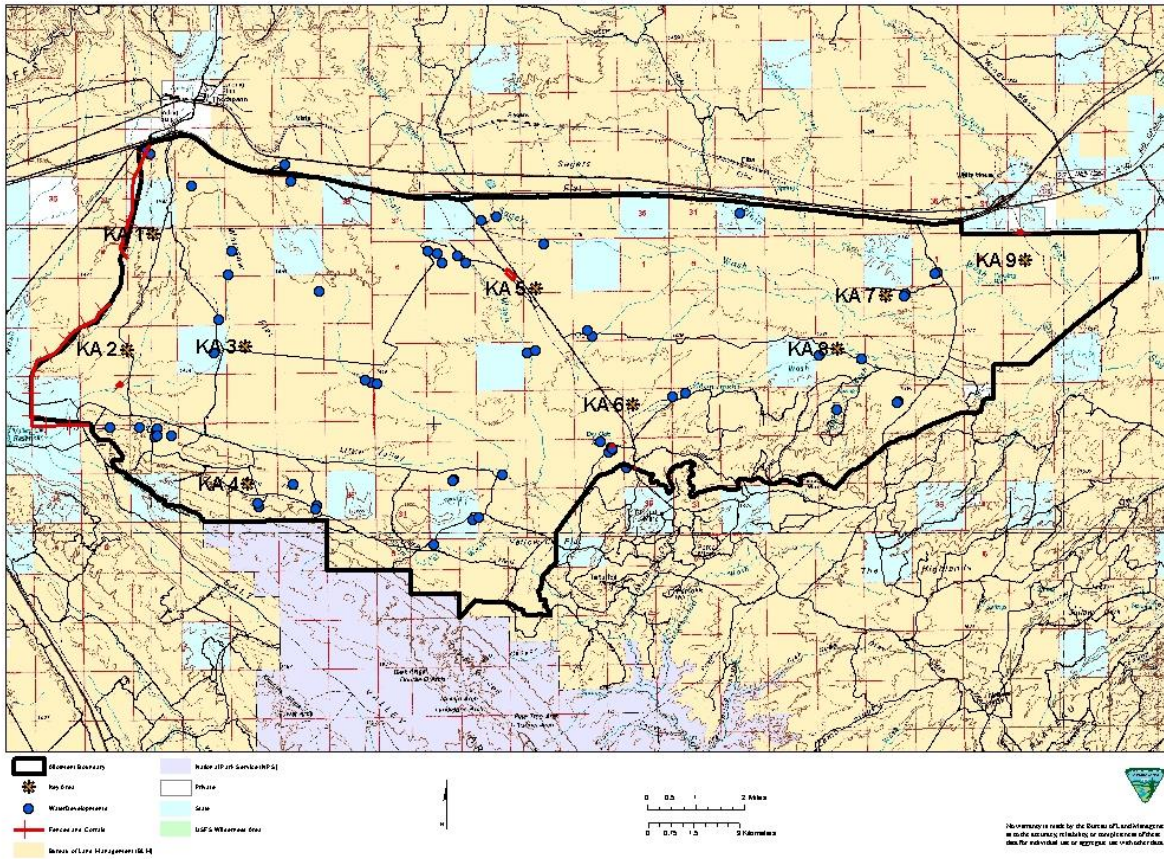
**Utah's Standards for Rangeland Health and Guidelines for Grazing Management
Moab Field Office Resource Management Plan October 2008
The livestock permittees individual allotment grazing case file
Monument Wash Allotment monitoring files
NRCS Ecological Site Descriptions**

APPENDIX A

MAPS

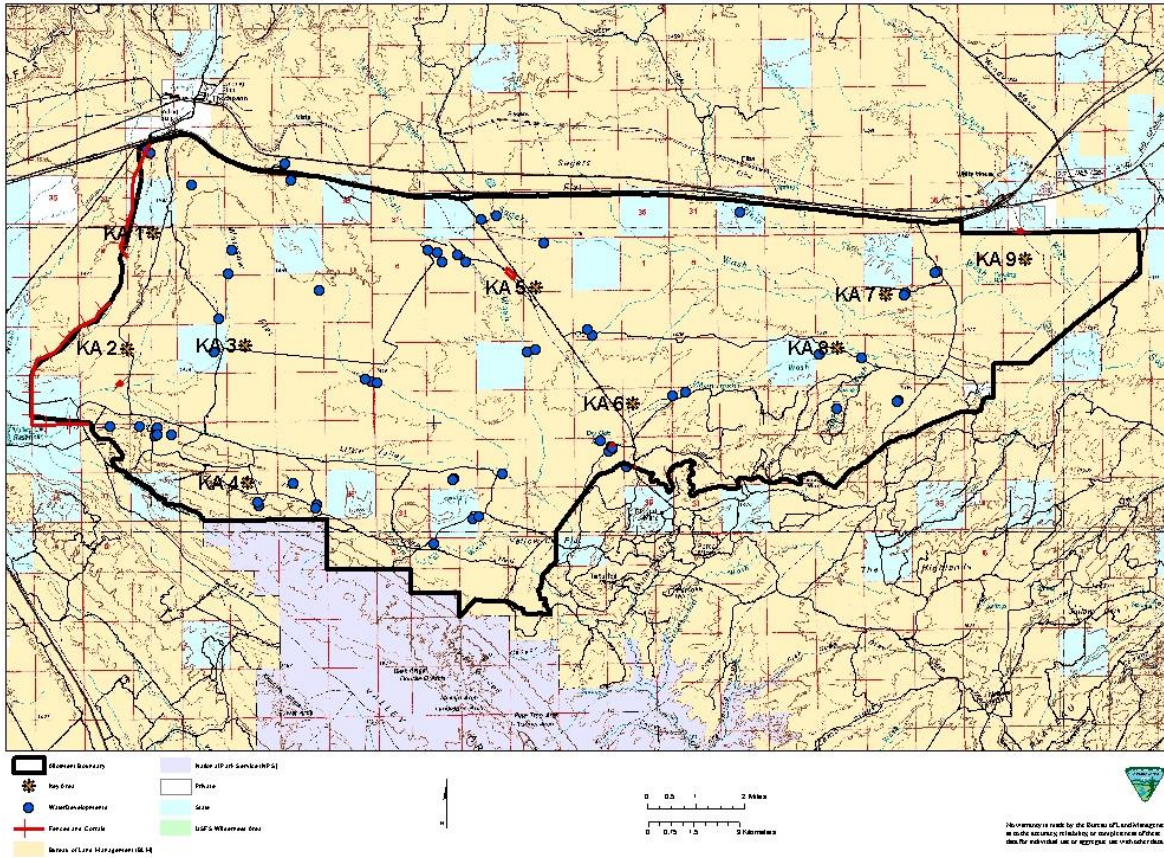
Map 1: Monument Wash Allotment
 Moab Field Office, Canyon Country District

June 13, 2014



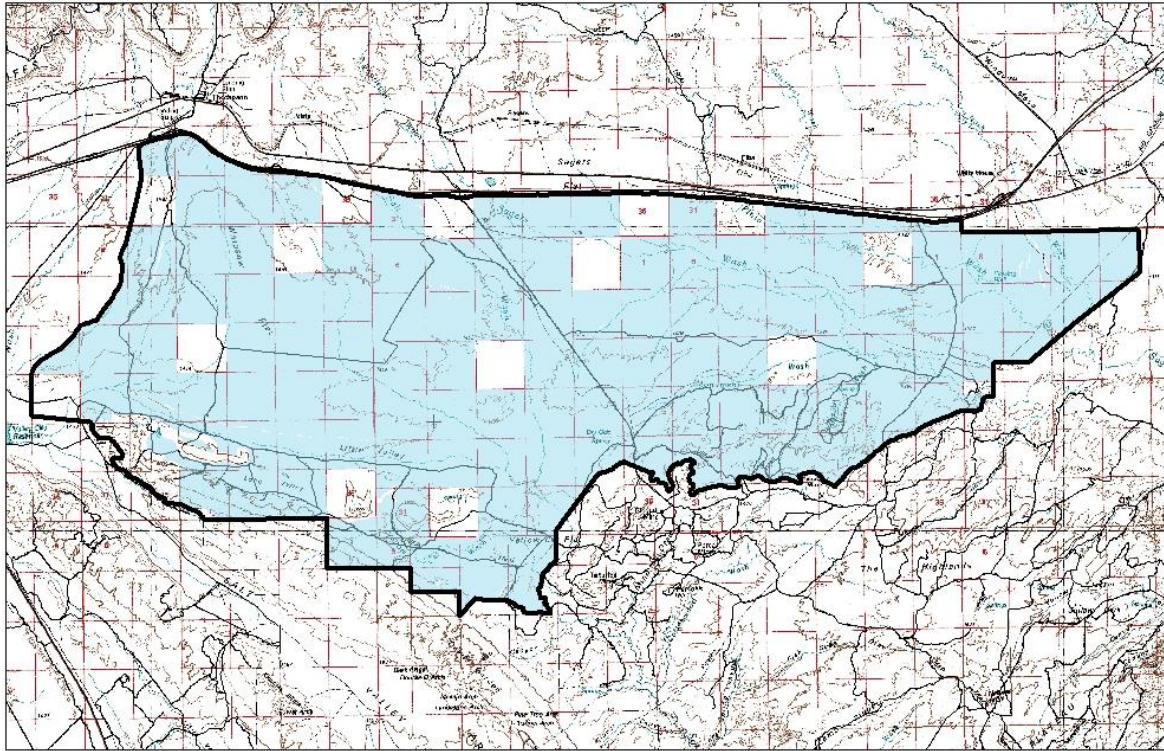
Map 1: Monument Wash Allotment
 Moab Field Office, Canyon County District

June 13, 2014

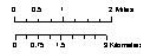


Map 2: Monument Wash Allotment Sensitive Soils
Moab Field Office, Canyon Country District

June 13, 2014



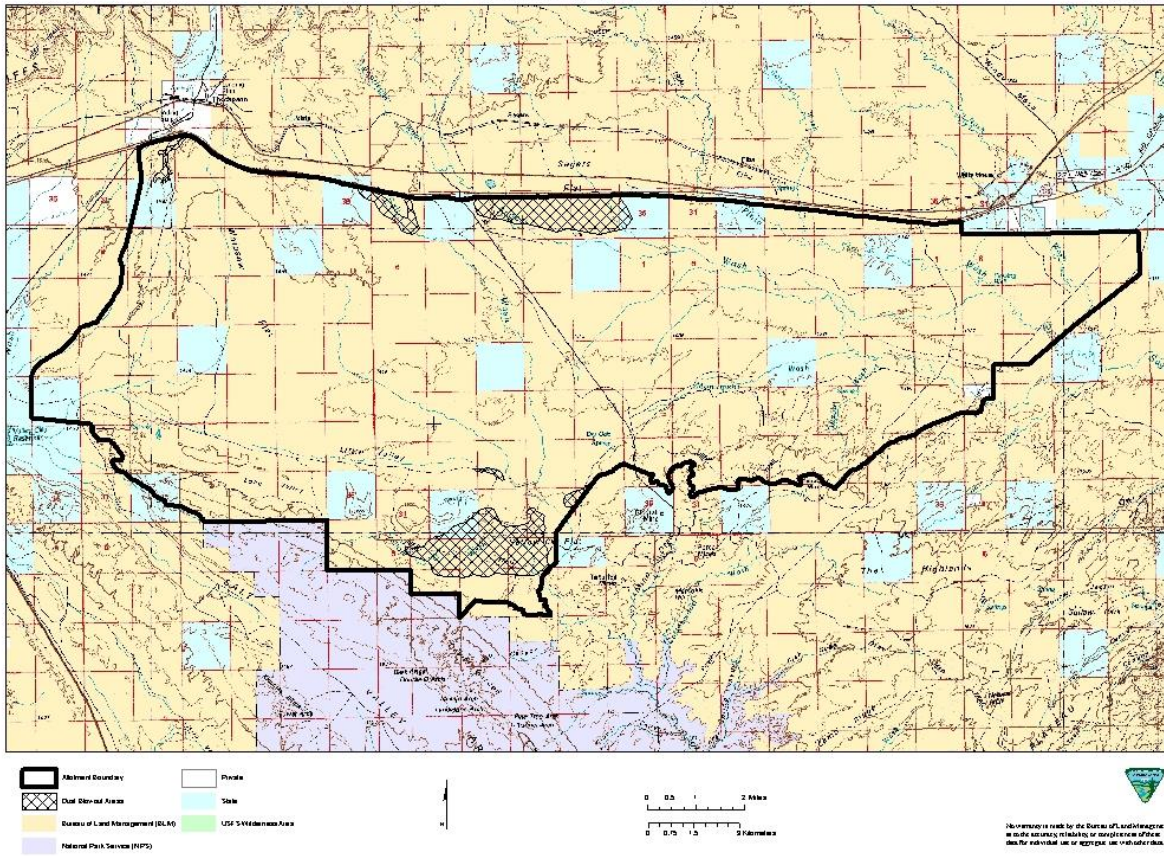
- Allotment Boundary
- Sensitive Soils



No warranty is made by the Bureau of Land Management
as to the accuracy, reliability, or completeness of the
data for individual use or aggregate use, including data.

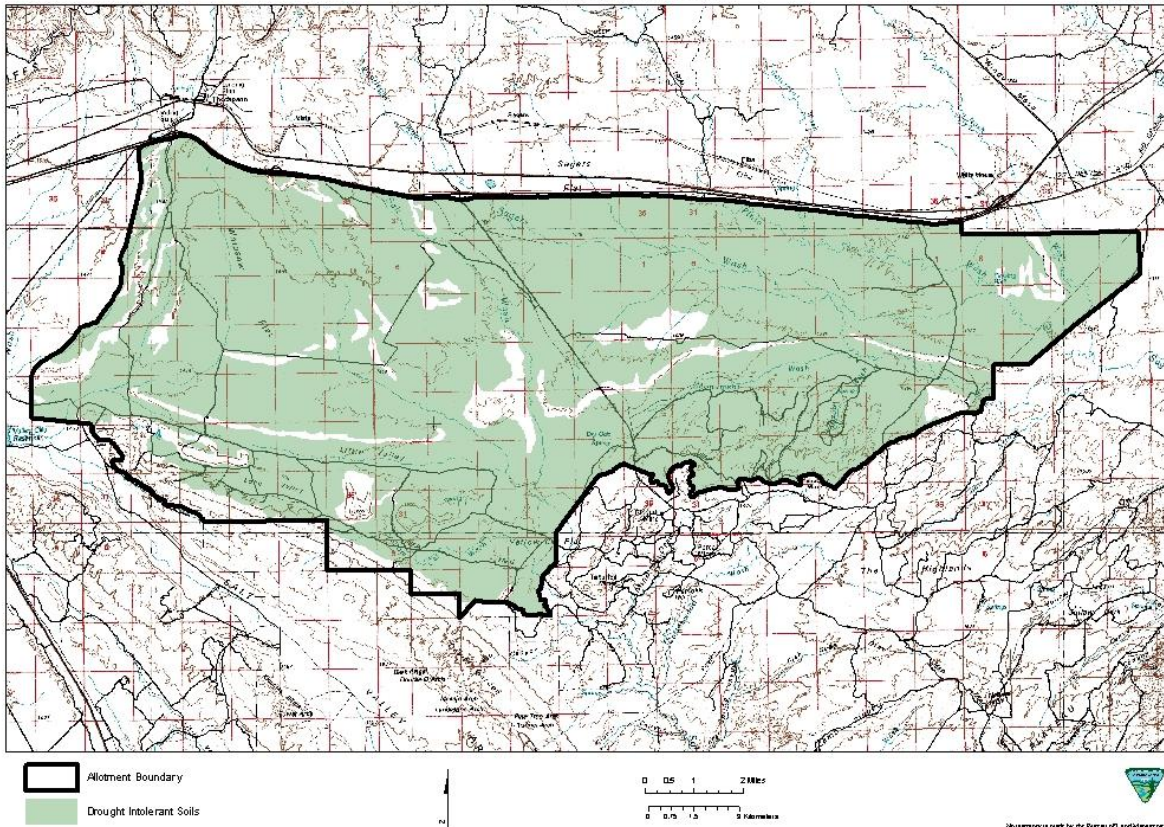
Map 3: Monument Wash Allotment Dust Blowout Areas
 Moab Field Office, Canyon Country District

June 13, 2014



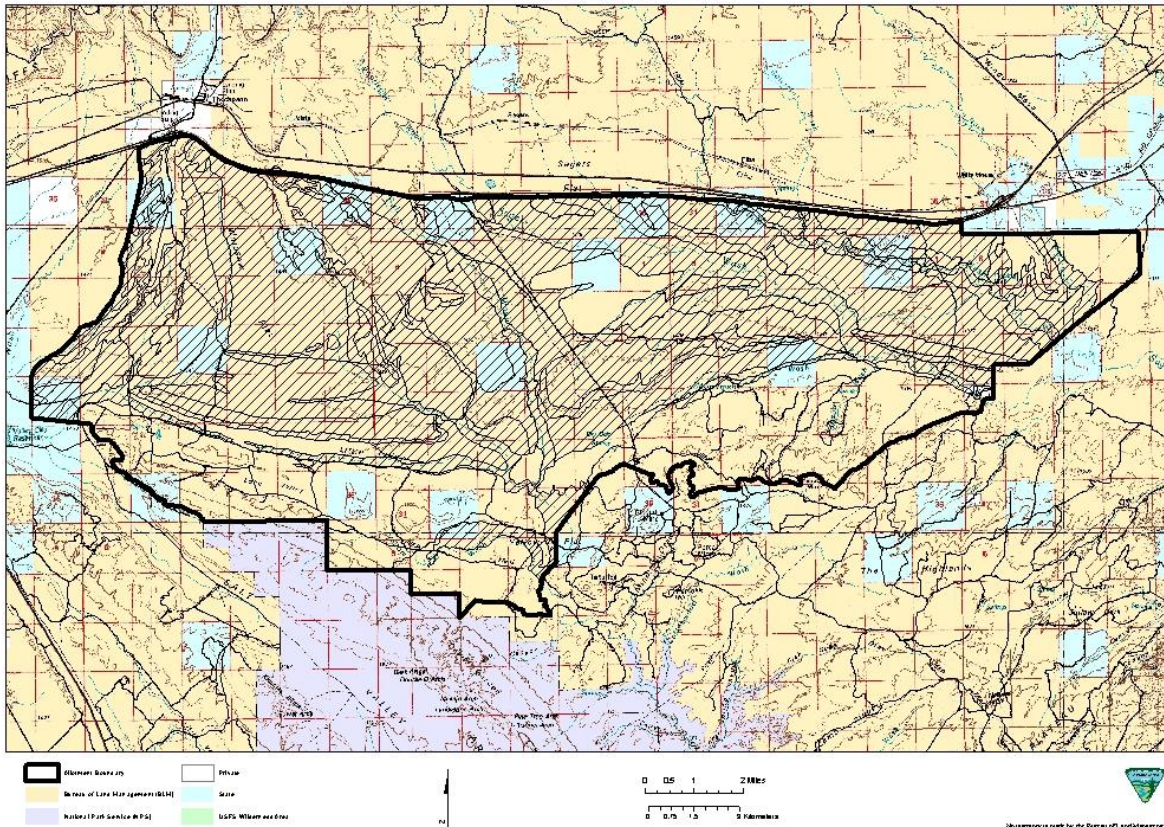
Map 4: Monument Wash Allotment Drought Intolerant Soils
Moab Field Office, Canyon Country District

June 13, 2014



Map 5: Monument Wash Allotment Moderately Saline Soils
 Moab Field Office, Canyon Country District

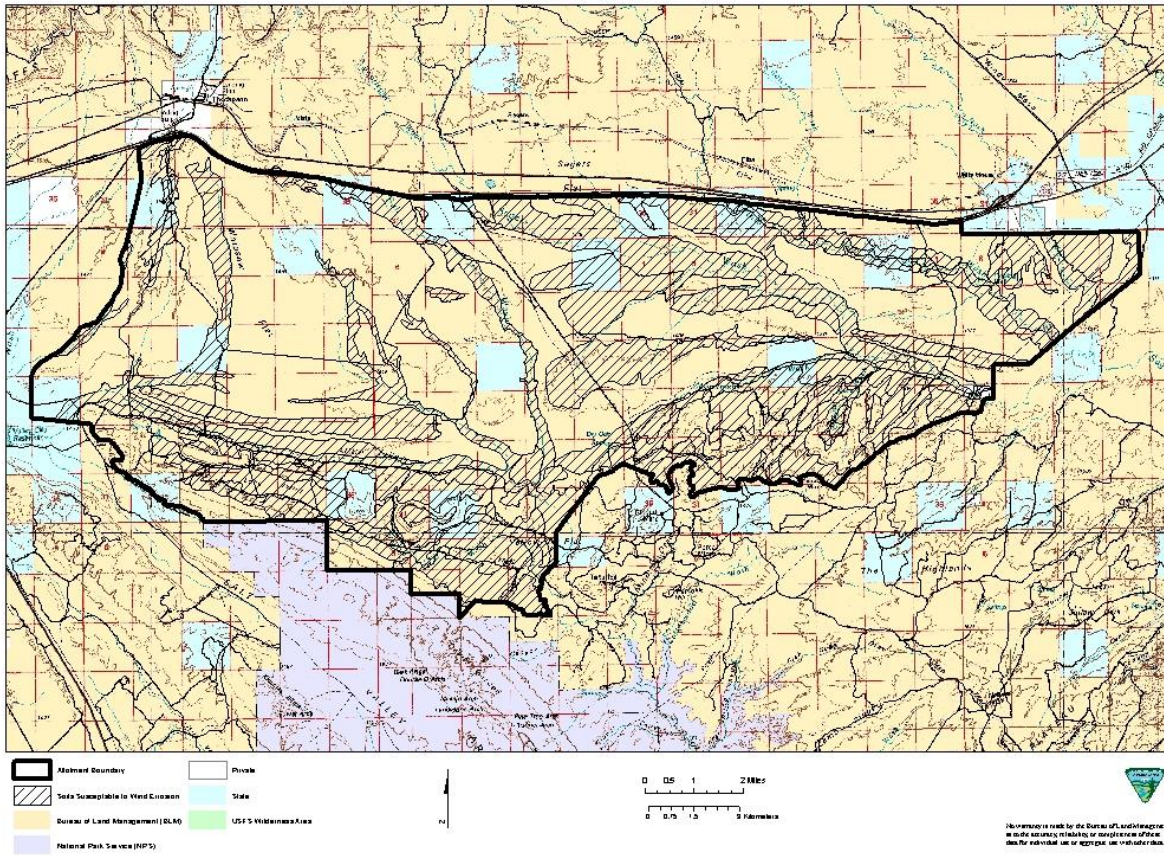
June 13, 2014



Revised map is made for the Bureau of Land Management
 in the following conditions, or conditions of the
 map for individual use or aggregate use, including data.

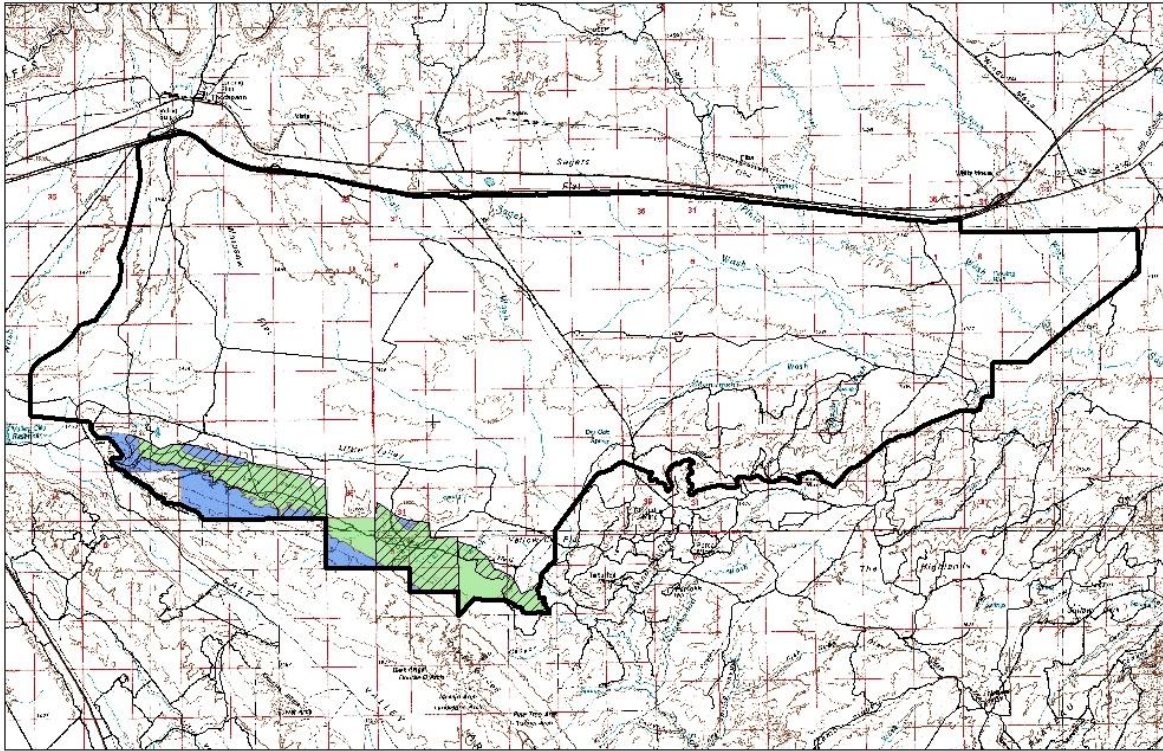
Map 6: Monument Wash Allotment Soils Susceptible to High Wind Erosion
 Moab Field Office, Canyon Country District

June 13, 2014

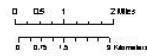


Map 7: Monument Wash Allotment Sensitive Plant Surveys
 Moab Field Office, Canyon Country District

June 13, 2014



- Allotment Boundary
- Jones Cyclodemia Survey Area
- Highest - 38%
- Medium Low - 34%



Reproduction is made for the Bureau of Land Management
 in the following conditions: for non-commercial use only
 and for individual use or appropriate use only.

APPENDIX B
INTERDISCIPLINARY TEAM ANALYSIS RECORD CHECKLIST

INTERDISCIPLINARY TEAM CHECKLIST

Project Title: Monument Wash Allotment Ten Year Grazing Permit Renewal

NEPA Log Number: DOI-BLM-UT-Y010-2016-0078-EA

Grazing Authorization Number: 4306376

Project Leader: Kim Allison

DETERMINATION OF STAFF: *(Choose one of the following abbreviated options for the left column)*

NP = not present in the area impacted by the proposed or alternative actions

NI = present, but not affected to a degree that detailed analysis is required

PI = present with potential for relevant impact that need to be analyzed in detail in the EA

NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

The following elements are not present in the Moab Field Office and have been removed from the checklist:
Farmlands (Prime or Unique), Wild Horses and Burros.

Determination	Resource	Rationale for Determination*	Specialist	Date
NP	Air Quality Greenhouse Gas Emissions	The State of Utah National ambient Air Quality Standards Areas of Non-attainment and Maintenance shows Grand County as an attainment or unclassifiable area. It is unlikely that any potential emissions from the proposed action will cause or contribute to the State of Utah National Ambient Air Quality Standards being exceeded or cause or contribute to any localized air quality issues. Therefore, Air Quality will not be discussed further in this EA.	David Pals	3/2/16
NI	Floodplains	Most floodplains in the Monument Wash Allotment are dry washes and can transport large flood events several times a year. Vegetation in these washes is mainly tamarisk and scattered cottonwood trees. Steep floodplain banks and gullies are common in the saline soil areas. There are no impacts from grazing to these dry wash floodplains.	Mark Grover	3/2/16
PI	Soils	Grazing can impact soils especially in the spring season. There are sensitive soils within this allotment including moderately saline soils, soils with high wind erosion ratings, and soils that can be adversely affected by drought. The allotment contains at least one known blowout area. Biological soil crusts are found within portions of the allotment in association with the pinyon juniper and near rock outcrops. Soils will be analyzed in the EA	Kim Allison	6/13/16
NP	Water Resources/Quality (drinking/surface/gro und)	The allotment is located 10-15 miles upstream from the Colorado River. There is water quality data available for the Colorado River, measured both upstream and downstream of the allotment. The State of Utah considers the Colorado River to be partly meeting state standards, based on exceedances of the selenium standard. These same exceedances are measured on the Colorado River upstream at the Colorado- Utah stateline. The high levels of selenium are coming from upstream in Colorado and do not increase as the river travels through this portion of Utah. We can therefore conclude that this allotment is not contributing to the Colorado Rivers water quality problems.	David Pals	3/2/16
NI	Wetlands/Riparian Zones	The riparian habitat in the Monument Wash Allotment consists of small springs. There is one developed spring on the allotment (Dry Oak Spring), which was functioning at risk when Rangeland Health Assessments began in 2010. A fence was constructed in 2010-11 to fence	Kim Allison	3/2/16

Determination	Resource	Rationale for Determination*	Specialist	Date
		off the riparian habitat and source. In 2016 the spring was assessed and found to be in proper functioning condition. Wetlands/riparian zones are not currently affected to a degree that detailed analysis is required.		
NP	Areas of Critical Environmental Concern	No ACECs have been established within the allotment under the current Moab RMP.	Katie Stevens	3/2/16
NI	Recreation	Recreational uses include hunting (small and big game species), hiking, and ATV use. Recreational uses are low in comparison to activities closer to Moab. With the proposed action and alternatives, the season of use is during the fall, winter and spring months. Most of the recreation use occurs during the hunting season in the fall months. There are no known impacts to recreation from livestock use. There are no known impacts to recreation from livestock use with the current AUMs and season of use.	Katie Stevens	3/2/16
NP	Wild and Scenic Rivers	No Wild & Scenic River exist within the allotment	Katie Stevens	3/2/16
NI	Visual Resources	The area South of Interstate 70 has a Visual Resource Management (VRM) Class III rating. The VRM Class III rating allows contrasts to the basic visual elements to be evident, but subordinate to the existing landscape. The management goal is to partially retain the existing character of the landscape, while allowing moderate changes. The impacts from the proposed Action would be allowable in VRM Class III areas. The proposed actions would not result in substantial impacts to visual resources in this area, either singularly or cumulatively.	Katie Stevens	3/2/16
NP	BLM Natural Areas	There are no BLM Natural Areas within the allotment, as defined in the 2008 Moab RMP.	Bill Stevens	3/2/16

Determination	Resource	Rationale for Determination*	Specialist	Date
NI	Socio-Economics	<p>Livestock grazing is an important part of the local custom, culture, and economy of Grand County and is supported in the County's Master Plan.</p> <p>The agriculture industry has declined dramatically in the last three decades. In 1970, total net income from farming and ranching in Grand County was \$901,000. By 1985, that number had dropped to \$88,000. In 2000 this number has dropped to -\$830,000. Negative income means that expenses out weighted revenue for farming and ranching operations. Most agricultural income (approximately 80%) is from cash receipts from livestock and crops, while the remaining 20% is from government payments. Employment based on farming and agricultural services accounts for only 2.6% of people working in Grand County in 2000 and this percentage has decreased since 1970 when it was 3.6%.</p> <p>The composition of livestock and crops has also shifted in the last decade. In 1970, 73% of gross farm income was from livestock, while 95% was from crops. By 2000, 47% of gross income was from livestock and 32% from crops.</p> <p>Permit fees associated with AUMs generate revenue for the U.S. Treasury, of which 12.5 % is returned to the local State of Utah Grazing Advisory Board. This money is then disbursed to local permittees (a direct economic benefit), for use in range improvements and maintenance projects. An additional 25% of permit fees is returned to the BLM field office from which it was collected to be used in on-the-ground range improvements.</p> <p>Reduction in ranching-based income could make it more difficult for families to earn a living on ranching alone. Family members may have to get second jobs or work off the farm to bring in additional income. However, none of the alternatives analyzed in this EA proposes any changes in the authorized AUMs, or any other changes that would likely cause any more than minimal changes to the local economy. Consequently, there would be no social or economic impacts to the livestock operators who graze these allotments, or to the local communities. This issue is therefore not addressed further in this EA.</p>	Bill Stevens	3/2/16
NP	Wilderness/WSA	There are no Wilderness/WSA located in the Monument Wash Allotment.	Bill Stevens	3/2/16
NP	Lands with Wilderness Characteristics	There are no Lands with Wilderness Characteristics in the allotment.	Bill Stevens	3/2/16
NI	Cultural Resources	Based on the results of the Class I and Class III inventories, no archaeological sites are adversely impacted by livestock grazing activities. Therefore a determination that "No Historic Properties are Adversely Affected" is appropriate and was submitted to the Utah State Historic Preservation Office (SHPO) for concurrence. On May 12, 2015 SHPO concurred that no archaeological sites and no Historic Properties are Adversely Affected.	Jared Lundell	3/2/16
NI	Native American Religious Concerns	BLM sent letters to the Hopi, Southern Ute, Ute Mountain Ute, Northern Ute, Zuni, Jemez, and Navajo tribes on 4/21/2016. The Hopi requested further information which the BLM sent. Consultation with the Hopi is on going.	Jared Lundell	6/14/16
NI	Environmental Justice	The proposed action and alternatives would not result in disproportionately high and adverse human health or environmental effects to minority or low income populations	Bill Stevens	3/2/16
NP	Wastes (hazardous or solid)	Livestock grazing at the proposed levels would not require nor produce hazardous or solid wastes as defined by the Resource Conservation and	David Pals	3/2/16

Determination	Resource	Rationale for Determination*	Specialist	Date																				
		Recovery Act (RCRA) or the Comprehensive Environmental Response Compensation and Liability Act (CERCLA).																						
NP	Threatened, Endangered or Candidate Animal Species	<p><u>MSO</u> No suitable Mexican Spotted Owl (MSO) habitat is within this allotment. The 1997 Willey-Spotskey MSO habitat model depicts isolated pixels of breeding habitat the 1999 Willey-Spotskey MSO habitat model depicts no breeding habitat, therefore there is no need to complete occupancy surveys.</p> <p><u>SWFL</u> This allotment does not offer any suitable breeding or migratory habitat for SWFLs. All washes here are typically arid wash bottoms and drainages with little or no vegetation. Some areas have scattered thickets of tamarisk, but density and overstory is not sufficient for SWFL occupancy.</p> <p><u>YBCU</u> This allotment does not offer any suitable breeding or migratory habitat for YBCUs. All washes here are typically arid wash bottoms and drainages with little or no vegetation. Some areas have scattered thickets of tamarisk, but cottonwood galleries or broadleaf over story is present.</p> <p>Section 7 consultation will not be needed.</p>	Pamela Riddle	3/2/16																				
PI	Migratory Birds	<p>The Migratory Bird Treaty Act, as amended, was promulgated for the protection of migratory birds. All raptors observed in Utah are protected by the Migratory Bird Treaty Act and some birds are also protected by the Endangered Species Act (ESA), the Bald and Golden Eagle Protection Act, and/or are included in the Utah Natural Heritage Program Species of Greatest Conservation Need (UDWR, 2005). A draft Memorandum of Understanding between the Forest Service, the BLM and USFWS provides direction for the management of migratory birds to promote their conservation (FWS, 2002e). The direction includes identifying species listed in the FWS Birds of Conservation Concern (BCC) that are likely to be present in the area of a proposed action. The Utah Partners in Flight (UPIF) working group completed a statewide avian conservation strategy identifying “priority species” for conservation due to declining abundance distribution, or vulnerability to various local and/or range-wide risk factors. One application of the strategy and priority list is to give these birds specific consideration when analyzing effects of proposed management actions and to implement recommended conservation measures where appropriate.</p> <p>The UPIF Priority Species List and the Utah Conservation Data Center database were used to identify potential habitat for priority species that could utilize habitat within the project area. Potential habitat and species are listed below.</p> <table><tr><th colspan="4">Utah Partners in Flight Priority Species*</th></tr><tr><td></td><td>DWR Habitat Value†</td><td>Breeding Habitat*</td><td>Winter Habitat*</td></tr><tr><td>Sage Sparrow</td><td>Critical Value Habitat</td><td>Shrubsteppe</td><td>Migrant</td></tr><tr><td>Brewer's Sparrow</td><td>Critical Value Habitat</td><td>Shrubsteppe</td><td>Migrant</td></tr><tr><td>Ferruginous Hawk</td><td>Breeding Habitat</td><td>Pinyon-Juniper</td><td>Grassland</td></tr></table>	Utah Partners in Flight Priority Species*					DWR Habitat Value†	Breeding Habitat*	Winter Habitat*	Sage Sparrow	Critical Value Habitat	Shrubsteppe	Migrant	Brewer's Sparrow	Critical Value Habitat	Shrubsteppe	Migrant	Ferruginous Hawk	Breeding Habitat	Pinyon-Juniper	Grassland	Pamela Riddle	3/2/16
Utah Partners in Flight Priority Species*																								
	DWR Habitat Value†	Breeding Habitat*	Winter Habitat*																					
Sage Sparrow	Critical Value Habitat	Shrubsteppe	Migrant																					
Brewer's Sparrow	Critical Value Habitat	Shrubsteppe	Migrant																					
Ferruginous Hawk	Breeding Habitat	Pinyon-Juniper	Grassland																					

Determination	Resource	Rationale for Determination*	Specialist	Date																		
		<i>*Utah Partners in Flight Avian Conservation Strategy Version 2.0.</i>																				
PI	Utah BLM Sensitive Species	<p>Ferruginous hawks, burrowing owls, prairie dogs and kit fox are known inhabit this allotment. There are many documented ferruginous hawk nest sites in the northwest portion of the allotment.</p> <p>This allotment also contains both historic and active white-tailed prairie dog colonies and could potentially offer expansion habitat for currently active colonies. Most activity appears to be in the northwest portion of the allotment. The presents of abandon prairie dog colonies indicates there is suitable burrowing owl nesting habitat, and there have been a nests documented in the allotment in the prairie dog colonies.</p> <p>Ferruginous hawks and kit fox are known to utilize this allotment. Short eared owls are rarely documented in this area, though this area has been identified by DWR as wintering habitat for these owls.</p> <p><i>Special Status Species in Utah with potential habitat within Monument Wash Grazing Allotment</i></p> <table><tr><th>Common Name</th><th>Scientific Name</th><th>Status</th></tr><tr><td>Bald Eagle</td><td><i>Haliaeetus leucocephalus</i></td><td>Utah State Sensitive</td></tr><tr><td>Burrowing Owl</td><td><i>Athene cunicularia</i></td><td>Utah State Sensitive</td></tr><tr><td>Ferruginous Hawk</td><td><i>Buteo regalis</i></td><td>Utah State Sensitive</td></tr><tr><td>White-tailed prairie dog</td><td><i>Cynomys leucurus</i></td><td>Utah State Sensitive</td></tr><tr><td>Kit Fox</td><td><i>Vulpes macrotis</i></td><td>Utah State Sensitive</td></tr></table>	Common Name	Scientific Name	Status	Bald Eagle	<i>Haliaeetus leucocephalus</i>	Utah State Sensitive	Burrowing Owl	<i>Athene cunicularia</i>	Utah State Sensitive	Ferruginous Hawk	<i>Buteo regalis</i>	Utah State Sensitive	White-tailed prairie dog	<i>Cynomys leucurus</i>	Utah State Sensitive	Kit Fox	<i>Vulpes macrotis</i>	Utah State Sensitive	Pamela Riddle	3/2/16
Common Name	Scientific Name	Status																				
Bald Eagle	<i>Haliaeetus leucocephalus</i>	Utah State Sensitive																				
Burrowing Owl	<i>Athene cunicularia</i>	Utah State Sensitive																				
Ferruginous Hawk	<i>Buteo regalis</i>	Utah State Sensitive																				
White-tailed prairie dog	<i>Cynomys leucurus</i>	Utah State Sensitive																				
Kit Fox	<i>Vulpes macrotis</i>	Utah State Sensitive																				
PI	Fish and Wildlife Excluding USFW Designated Species	<p>Raptor such as golden eagles, red tail hawks and other raptors may forage and nest in this area.. Predator such as cougar, coyotes and fox can also be found here. Animals typically associated with desert shrub and greasewood plant communities are found in this area and may include numerous species of snakes, lizards, small mammals and songbirds. The most commonly observed species include gopher snakes, antelope ground squirrels, cottontail rabbits, blacktail jackrabbit, mourning doves, horned larks, and ravens. The plant communities in the allotment would provide limited nesting habitat for various bird species.</p> <p><u>Pronghorn Antelope Habitat</u></p> <p>This allotment contains high value antelope habitat and one antelope water development. Chapter 16 of the AMS defines issues and conflicts with antelope habitat in this area:</p>	Pamela Riddle	3/2/16																		
NI	Threatened, Endangered or Candidate Plant Species	<p>There are small amount of Jones’ Cycladenia Potential Habitat within the Monument Wash Allotment. There is approximately 1,710 acres of highest potential habitat within the allotment which is inaccessible to cattle. There is no evidence of cattle use within these acres. Due to the inaccessibility to cattle only portion of the area was surveyed (530 acres) and no plants were found.</p> <p>There is approximately 3,870 acres of medium low potential habitat within this allotment which 490 acres are in rough terrain with steep slopes and lots of boulders. These 490 acres are inaccessible to cattle and there is no evidence of cattle using these acres and BLM surveyed 490 acres and no plants were found. Within the 3,870 acres there is 3,380 acres that are accessible to cattle grazing and there are two livestock ponds and one well within these acres. BLM survey (2,330 acres) around</p>	Dave Williams	04/06//16																		

Determination	Resource	Rationale for Determination*			Specialist	Date
		the water locations where livestock would make the most use of the vegetation within this potential habitat and no plants were found. Due to the inaccessible to livestock grazing and the lack of Jones’ Cycladenia plants within these acres there would be no impact to habitat or plants. See Monument Wash Grazing Allotment Staff Report for Jones’s Cycladenia dated April 2016 for more detail. Section 7 consultation will not be needed.				
PI	Utah BLM Sensitive Species	Cisco milkvetch are documented populations to occur within the western portion of the allotment. Canyonlands Lomatium and Entrada rushpink may occur but there are no known populations of these plants within this allotment. <i>Special Status Species in Utah with potential habitat within Monument Wash Grazing Allotment</i>			David Williams	04/06/16
		Common Name	Scientific Name	Status		
		Cisco milkvetch	<i>Astragalus sabulosus</i> var. <i>sabulosus</i>	Utah State Sensitive		
		Entrada rushpink	<i>Lygodesmia grandiflora</i> var. <i>entrada</i>	Utah State Sensitive		
		Canyonlands lomatium	<i>Lomatium latilobum</i>	Utah State Sensitive		
PI	Livestock Grazing	The permittee for the Monument Wash Allotment may be impacted by new proposed terms and conditions.			Kim Allison	3/2/16
NI	Rangeland Health Standards	The Monument Wash Allotment has been evaluated and found to be meeting all Utah’s Rangeland Health Standards.			Kim Allison	3/2/16
PI	Invasive Species/Noxious Weeds	The proposed action is expected to spread noxious weeds as livestock concentrate around water developments and supplement locations. There are several ponds throughout the allotment with Russian knapweed infestations on them and could spread when the developments are maintained. Will be analyzed in the EA document.			Jordan Davis	3/2/16
PI	Vegetation Excluding USFW Designated Species	There are potential impacts to vegetation from livestock grazing. Will be analyzed in the EA.			Kim Allison	3/2/16
NP	Woodland/Forestry	There are no Woodlands or Forest present on the Monument Wash Allotemnt.			Kim Allison	3/2/16
NI	Fuels/Fire Management	When the Monument Wash grazing allotment is overlaid with Fire Management Unit (FMU) 12 and the fire history GIS data layer, it shows that there have been 17 fires in the project area. Although fires have started in the area, fires typically only move with a high cheatgrass component. The largest fire within the unit was the 1200 acre Nation Fire in 1985. Fuels in the area, due to soil conditions are generally sparse and unable to sustain fire spread, unless cheatgrass is abundantly present due to higher than average moisture. Fuels in this FMU generally consist of sagebrush, saltbrush, native grasses, Pinyon/Juniper and non-native cheatgrass. Fuels reduction/restoration and Emergency Stabilization and Rehabilitation (ES&R) actions could preclude grazing for periods of time within the grazing allotment consistent with the Moab Resource Management Plan (RMP, 2008 GRA-11 pg. 69). The proposed actions would not result in substantial impacts to fuels/fire resources in this area, either singularly or cumulatively. No further analysis is needed.			Josh Relph	6/14/16
NI	Geology / Mineral Resources/Energy Production	There are uranium prospect and mining claims in the area. Known deposits are in the subsurface and would not be impacted by grazing.			David Pals	3/2/16
NI	Lands/Access	Renewal of the grazing authorization would not affect existing access or rights-of-way within the Monument Wash Allotment.			Jan Denney	6/16/16

Determination	Resource	Rationale for Determination*	Specialist	Date
NI	Paleontology	The geologic formations within the Monument Wash Allotment are known to contain vertebrate and invertebrate fossils. However, the fossils are imbedded in bedrock and therefore would not be impacted by livestock grazing. If any improvements or surface disturbing activities were to occur, a paleontological clearance would be required.	ReBecca Hunt-Foster	3/22/16

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
Environmental Coordinator			
Authorized Officer			

APPENDIX C
External Scoping Comments and Responses:

Initial scoping closed on February 15, 2016. Scoping comments were received from three parties, The State of Utah, Office of the Governor, Western Watersheds Project, and Marc Thomas.

The State of Utah, Office of the Governor: See Section 2.5 alternatives considered, but Eliminated from Further Analysis: 1) if the allotments are in good condition the BLM should look to see if the allotments can sustain an increase in numbers. 2) Conduct analysis for common use on these allotments. Studies have shown that the combination of sheep and cattle grazing on the same allotment can improve range conditions compared to all sheep; the BLM must consider whether the allotments could be better managed through common use.

Western Watersheds Project; The comments from Western Watersheds Project were addressed to the BLM Vernal Field Office dated November 3, 2007 and were for the Winter Ridge Allotment Management Plan (AMP) group of allotments, not the Sand Flats, Scharf Mesa and Hotel Mesa Allotments and therefore are outside the scope of this document and will not be considered.

Marc Thomas: Requested five benchmarks of sustainable grazing and restoration be incorporated into the EA. The proposed action and alternatives incorporate the pertinent sections and action required from the Moab RMP 2008, the Endangered Species Act (ESA) of 1973 as amended, Section 106 of the National Historic Preservation Act of 1966, as amended, Standards of Quality for Waters of the State, R317-2-6, Utah Administrative Code, December 1997, Fundamentals of Rangeland Health (43 CFR 4180) and Utah's Standards for Rangeland Health and Guidelines for Grazing Management, and the BLM Utah Riparian Management Policy (Instruction Memorandum No. UT 2005-091), which address benchmarks 1 through 4. Benchmark 5 is not supported by the Moab RMP 2008, and 43CFR part 4100 Grazing Administration, does not contain regulatory authority to allow an accountability benchmark. Additionally the proposed action and alternatives include terms and conditions which incorporate the Moab RMP 2008 grazing utilization management decision, which requires livestock to be removed when utilization thresholds are met.

Appendix D:
Wildlife Friendly Fencing Guidelines

Information in the Moab BLM Wildlife Friendly Fencing Guidelines has been taken from A Landowner's Guide to Wildlife Friendly Fences, funded and developed by the Montana Fish, Wildlife and Parks – Wildlife Resources Program in Helena, Montana. (Paige 2008).

Illustrations by: E.R Jenne Illustration, Missoula, MT. edjenne@earthlink.net.

Photos by: Christine Paige, Ravenworks Ecology, Stevensville, MT. chrispaige@gmail.com.

Wildlife Friendly Fencing Guidelines

The Moab BLM recommends the following measures to be taken in areas where Wildlife Friendly Fences are recommended. These fences should be low enough for adult animals to jump, high enough for animals to crawl under, and minimize the chance of tangling.

A top wire or rail preferably no more than 40" above the ground, and absolutely no more than 42";

At least 12" between the top two wires;

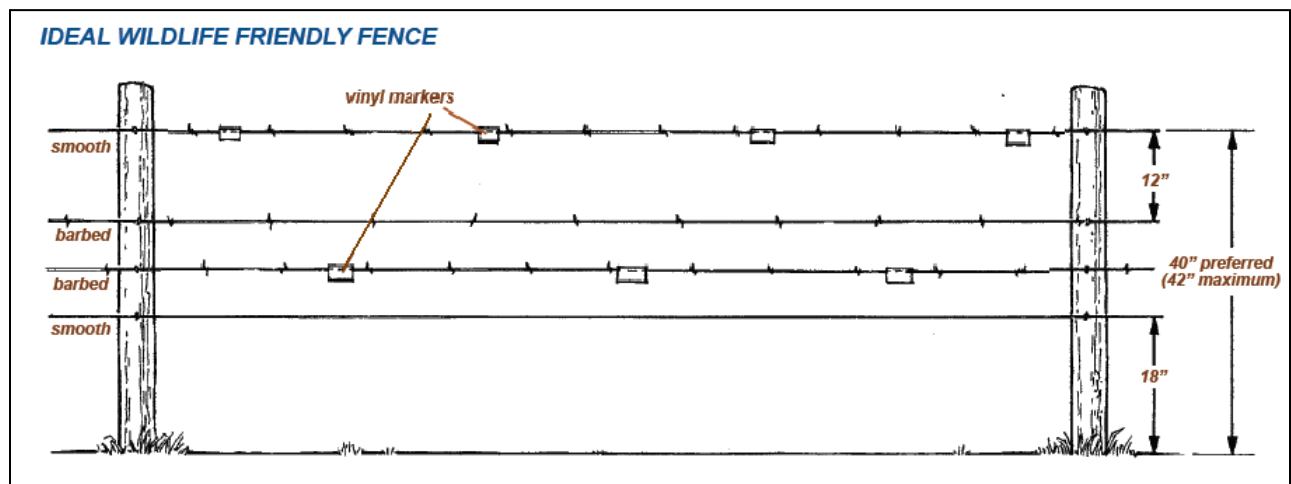
At least 18" between the bottom wire or rail and the ground;

Smooth wire on bottom.

No vertical stays. If vertical stays are necessary they should **not be** attached to the bottom wire;

Posts at 16.5-foot intervals;

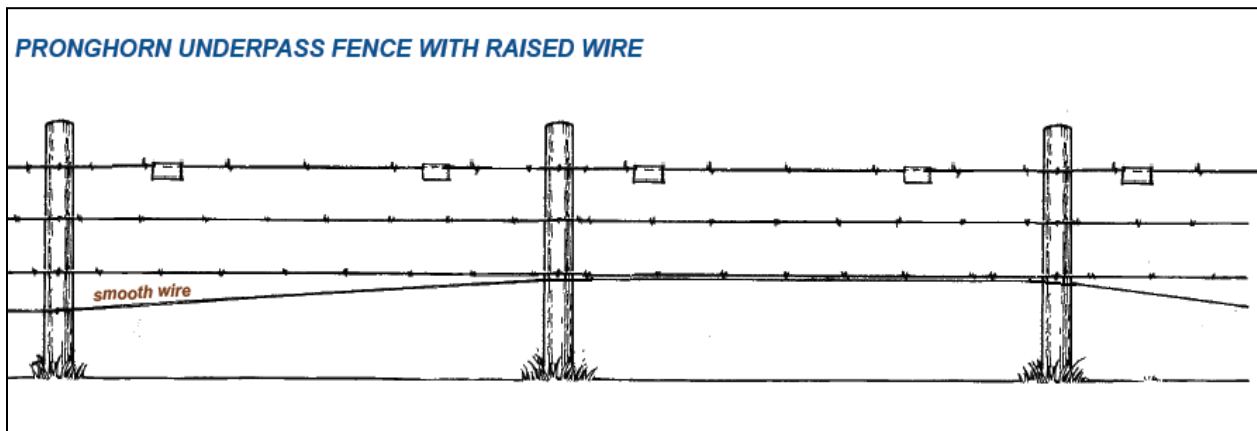
Gates, lay-downs fences, underpasses, goat bar or other passages where wildlife concentrates and cross;



Pronghorn Underpass Fence with Raised Wire

Pronghorn prefer to crawl under fences. They will often run for miles looking for fence openings or spots to crawl under a fence, and have been known to die of starvation when blocked by a fence they see as impassable. Pronghorn "underpass" can be created by raising the bottom strand in selected fence sections. In selected sections, raise the bottom smooth wire on two posts

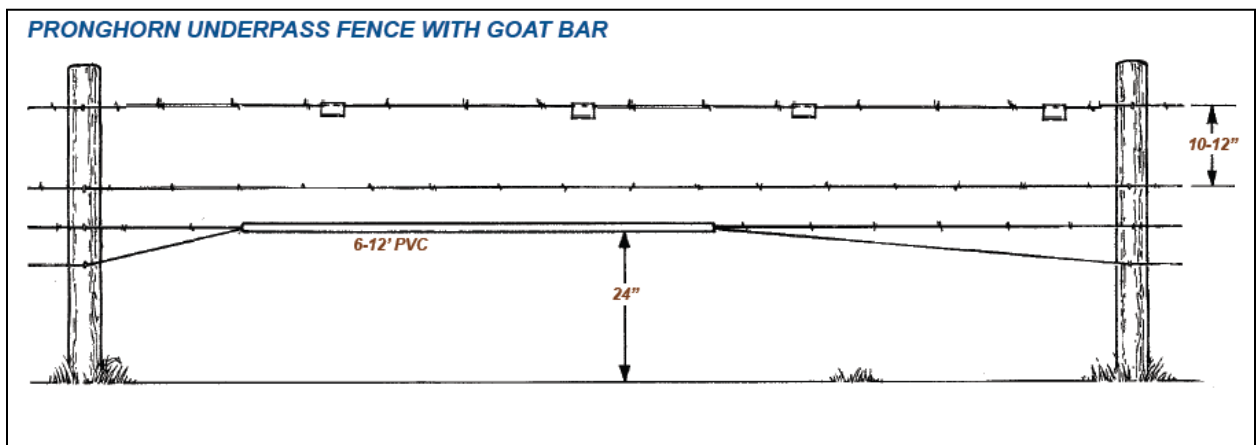
to the height of the third wire, securing in place with a staple lock. The smooth wire can be dropped again if needed.



Pronghorn Underpass Fence with Goat Bar

PVC underpass or “goat bar” can be created by simply gathering the bottom two wires in a PVC pipe to make a higher clearing for pronghorn of any age to crawl under while the fence remains effective for controlling horses and cattle. This design has been used extensively in pronghorn habitat.

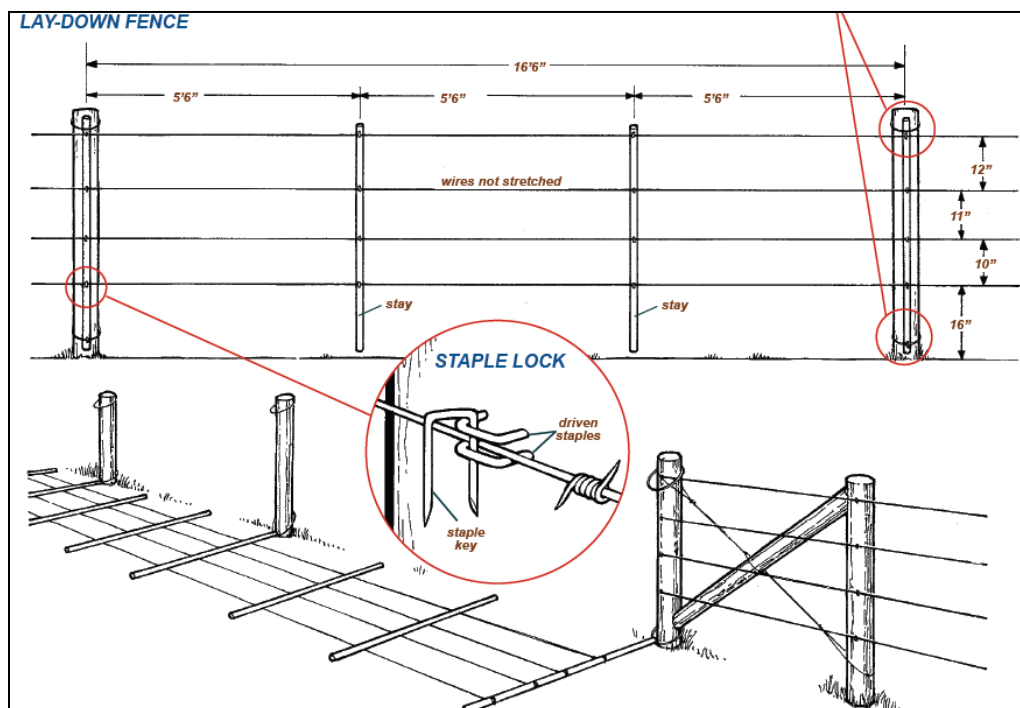
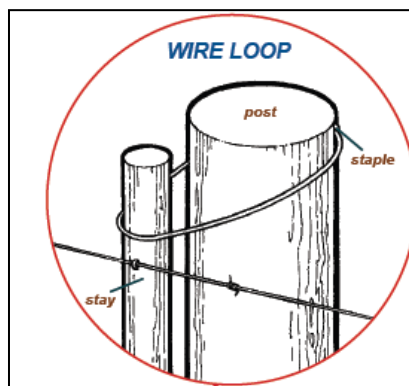
Space fence wires heights at 18–24–30–40”; use smooth wire on the bottom. Cut several 6’ to 12’ lengths of PVC pipe. With a table saw, cut a 1/4” slot the length of each PVC pipe. Note that a 1/4” cut can be made by matching up two 1/8” wide blades and using a wood guide. Grip the bottom two fence wires together, and feed the PVC pipe onto the wire from one end of the pipe. If the pipe gets hung up on a barb at the fore-end, work barb into end of pipe and continue. Once the pipe has been adequately started, grip the pipe near the fore-end and begin pulling down the length of the wire. Space these underpasses intermittently along the fence and especially in fence corners where pronghorn may be directed by the run of fence.



Lay-Down/Pull-back Fence:

A lay-down fence is a standard 3-wire or 4-wire fence that can be laid on the ground as a unit to allow ungulates to pass through during migration or seasonal use. They can be constructed from a combination of smooth wire or barbed-wire. Fence posts can be wooden or steel. Posts should be spaced at 16.5' intervals. Pull back fences are similar in construction, but are pulled back to the side rather than laid down

For barbed- or smooth-wire fence, one to two stays are needed between fence posts, plus a stay lined up with each fence post. Wire loops, secured at the top and bottom of the fence posts, support the fence stays. Be sure the fence stays do not touch the ground. The lay-down section can then be dropped by flipping up the top loop and lifting the stays out of the bottom loop.



Appendix E
Evaluation of Utah's Standards for Rangeland Health and Guidelines for Grazing
Management

RANGELAND HEALTH EVALUATION

Site/Area: Monument Wash Allotment

Acres: 79,289

Compliance with Rangeland Health Standards:

Rangeland health assessments were conducted on the allotment in 2008. The 17 Indicators of Rangeland Health were used to evaluate the health of the allotment. The indicators are primarily qualitative with several measures or techniques that are quantitative. This evaluation focuses on individual indicators and later combines several indicators to help in assessing the soils, hydrology, and vegetation. Trend data including density and photo plots has been collected in the allotment for more than twenty years. Riparian assessments were conducted using proper functioning condition methodology.

Assessment sites were selected using soil map units (SMU). Each SMU includes a complex of several different ecological sites. These sites are different in vegetation composition, soil type, and texture. Within several of the ecological sites the Bureau of Land Management (BLM) has established monitoring sites. The monitoring sites are called Key areas (KA). KA have had trend data completed for 20+ years and track the changes in vegetation at the sites. This information is used to help determine the amount of disturbance on the sites.

Upland assessments were conducted on SMUs 11, 30, and 40 (refer to the USDA, Soil Survey of Grand County, 1989).

The Monument Wash Allotment is located approximately 18 air miles northeast of Moab, Utah. The allotment is divided into two pastures (West and East), but there are no fences or topographic barriers keeping the livestock in the pastures. The West pasture includes KA 1, 2, 3, and 4. The East pasture includes KA 5, 6, 7, 8, and 9.

The following list shows the acreage in the allotment and the current active federal cattle AUMs within the allotment:

Table 1: Grazing use authorization

Allotment Name and Number	Livestock			Active Permitted Use (AUMs)	Acres	Land Status
	Number	Kind	Season of Use			
Monument Wash 05392	861	Cattle	11/16 to 5/15	4713	70,462 8,736 91	BLM State Private

The table below summarizes the evaluation data and ratings for the Rangeland Health Standards.

Assessment Site	Standards											Rating By Pasture		
	Upland Soils			Riparian and Wetland Areas				Desired Species					Water Quality	
	a	b	C	a	b	c	d	a	b*	c	d*			e
West 1	M	M	M	Riparian assessments were conducted in 2008.				M	M	M	N/A	M	Based on the downstream water quality data for the Colorado River, we can reasonably conclude the Monument Wash Allotment is meeting Utah Rangeland Health Standard #4.	Met
West 2	M	M	M					BM	M	BM	N/A	BM		
West 3	NM	M	NM					NM	M	NM	N/A	NM		
West 4	M	M	M					M	M	M	N/A	M		
East 5	M	M	M					BM	M	BM	N/A	BM		Met
East 6	M	M	M					BM	M	BM	N/A	BM		
East 7	M	M	M					M	M	M	N/A	M		
East 8	M	M	M					BM	M	BM	N/A	BM		
East 9	M	M	M					M	M	M	N/A	M		
Overall Rating of Standards	Met			Met				Borderline Met					Met	

M=Met

NM=Not Met

BM=Borderline Met

* Desired Species (b), and (d), are specific to wildlife species and the data was obtained from the wildlife staff report

Standard 1 Upland Soils: Upland soils exhibit permeability and infiltration rates that sustain or improve site productivity, considering the soil type, climate, and landform:

Indicators of Rangeland Health and monitoring data were used to evaluate this standard:

Indicators of Rangeland Health:

- 1) Rills
- 2) Water flow patterns
- 3) Pedestals and/or teracettes
- 4) Bare ground
- 5) Gullies.
- 6) Wind-scoured blowouts and depositional areas.
- 7) Litter movement
- 8) Soil surface resistance to erosion.
- 10) Plant community composition and distribution relative to infiltration and runoff
- 11) Compaction layer
- 12) Functional/structural groups
- 14) Litter amount.
- 16) Invasive/noxious weeds

a) Sufficient cover and litter to protect the soil surface from excessive water and wind erosion, promote infiltration, detain surface flow, and retard soil moisture loss by evaporation. (Indicators Used: 1, 2, 4, 6, 7, 8, 10, and 14)

Indicator 1: As documented in the Indicators of Rangeland Health data sheets:

The amount of rills matched what was expected for the site at all Key areas in the West and East Pastures.

Indicator 2: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Water flow patterns matched what was expected at the site for Key areas 1, 2, and 3. Key area 4 showed slightly too moderately more flow patterns than what was expected at the site.

East Pasture:

Water flow patterns matched what was expected at the site for Key areas 5, 6, 7, and 8. Key area 9 showed slightly too moderately more flow patterns than what was expected at the site.

Indicator 4: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Bare ground matched what was expected for the site at Key areas 2, 3, and 4. Bare ground was slightly too moderately more than what was expected for the site at Key area 1.

East Pasture:

Bare ground matched what was expected for the site at Key area 9. Bare ground was slightly too moderately more than what was expected for the site at Key areas 5, 6, 7, and 8.

Indicator 6: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

There were no wind scoured blowouts or depositional areas in Key areas 1, 2 3, and 4.

East Pasture:

Wind scoured blowouts and depositional areas were scattered throughout the site at Key area 5, giving it a moderate rating. Wind scoured blowouts were infrequent and few at Key areas 7 and 8, a slight to moderate rating for the sites. Key areas 6 and 9 matched what was expected for the site.

Indicator 7: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Litter movement matched what was expected at the site for Key area 1. Key areas 2 and 4 were given a slight to moderate rating due to small size litter classes being displaced and due to a reduced amount of perennial vegetation to catch the litter. Key Area 3 was given a rating of moderate to extreme due to there being no perennial vegetation which would catch the litter.

East Pasture:

Key areas 5, 6, 7, 8, and 9 all were given a rating of slight to moderate due to a reduced amount of perennial vegetation which would catch the litter. Only small litter sizes are moving.

Indicator 8: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Key areas 1, 2, and 3 soil surface resistance to erosion match what is expected for the site. Key area 4 was rated slightly to moderately lower than what was expected for the site.

East Pasture:

Key areas 5, 8, and 9 soil surface resistance to erosion match what is expected for the sight. Key areas 6 and 7 soil surface resistance to erosion were rated slightly to moderately lower than what is expected for the sight.

Indicator 10: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Key area 1 has moderately increased runoff from the site due to a reduced amount of perennial shrubs and the episodic population increases of cheatgrass decreasing water infiltration. Key areas 2 and 4 have slightly to moderately more runoff due to reduced perennial shrubs and decreased infiltration due to episodic population increases of cheatgrass. Key area 3 has extremely more runoff due to the loss of all perennial vegetation and decreased infiltration due to the presence of non-native invasive halogeton, cheatgrass, and Russian thistle dominating the site. Key area 3 is an old sheep bedding ground.

East Pasture:

Key area 5, 6, and 8 have moderately increased runoff from the site due to a reduced amount of perennial shrubs and the episodic population increases of cheatgrass decreasing water infiltration. Key area 7 has slightly to moderately more runoff due to reduced perennial shrubs and decreased infiltration due to episodic population increases of cheatgrass. Key area 9 matches what is expected for the site.

Indicator 14: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Key areas 1, 2, and 4 have moderately more litter than what is expected due to higher than expected mortality of shrubs, as well as the episodic increases of cheatgrass some years. Key area 3 has extremely more litter than what is expected due to dominance of non-native cheatgrass, halogeton, and Russian thistle.

East Pasture:

Key area 5, 6, and 9 have slightly too moderately more litter than what is expected due to some reduction of native perennial vegetation and the presence of non-native cheatgrass. Key area 7 matches what is expected for the site. Key area 8 has moderately more litter than what is expected due to higher than expected mortality of Perennial vegetation, as well as the episodic increases of cheatgrass some years

b) The absence of indicators of excessive erosion such as rills, soil pedestals, and actively eroding gullies. (Indicators Used: 1, 3, 5, and 11)

None of the sites showed signs of excessive erosion. There were no rills present at any of the sites. The vegetation was not showing signs of present or past pedestalling. There are no actively eroding gullies present at any site. There are active eroding gullies on the Allotment, but not to the extent that management is needed to assist in the natural rehabilitation of the gullies and none of the gullies active eroding are being further degraded by cattle grazing on the allotment.

c) The appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the desired plant community (DPC), where identified in a land use plan, conforming to these Standards or (2) where the DPC is not identified, a plant community that equally sustains the desired level of productivity and properly functioning ecological conditions. (Indicators Used: 12 and 16)

Indicator 12: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Key areas 1 and 4 were rated slightly too moderately changed from what is expected and Key area 2 was rated moderately changed from what is expected. These changes are due to a decrease in the amount of perennial vegetation and the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 3 was rated extremely changed from what is expected due to non-native cheatgrass, halogeton, and Russian thistle dominating the site.

East Pasture:

Key areas 5, 7, and 9 were rated as slightly too moderately changed from what is expected and Key areas 6 and 8 were rated as moderately changed from what is expected. These changes are due to a decrease in the amount of perennial vegetation and the episodic increase of the amount of cheatgrass when precipitation conditions are optimum.

Indicator 16: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Key areas 1, 2, and 4 were rated as slightly too moderately changed from what is expected due to the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 3 was rated extremely changed from what is expected due to non-native cheatgrass, halogeton, and Russian thistle dominating the site.

East Pasture:

Key areas 5, 6, 8, and 9 4 were rated as slightly too moderately changed from what is expected due to the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 7 matches what is expected for the site.

Trend Data:

Overall the vegetation on Monument Wash Allotment is static to upward trend. Shadscale is in a downward trend in key area 1. Spiny hopsage is in a downward trend in key area 4. Valley Saltbush and budsage are in a downward trend in key area 5. Key area 7 has no plant species in a downward trend.

Standard # 2 Riparian and Wetland areas: Riparian and wetland areas are in properly functioning condition. Stream channel morphology and functions are appropriate to soil type, climate and landform.

The Monument Wash Allotment is located primarily in the Sagers Wash Watershed and the Salt Wash Watershed. The allotment has only a few springs scattered throughout the allotment and only one spring is developed as a water source (Dry Oak Spring).

Proper functioning Condition data was used to complete the evaluation. The spring was evaluated in 2010 and was rated functioning at risk with livestock contributing to the rating. In 2011 the spring source and surrounding riparian habitat was fenced to eliminate livestock access. There is a stock pond outside the fence that is maintained for livestock use. The spring was evaluated again in 2016 and was rated in proper functioning condition.

a) Stream bank vegetation consisting of, or showing a trend toward, species with root masses capable of withstanding high stream flow events. Vegetative cover adequate to protect stream banks and dissipate stream flow energy associated with high-water flows, protect against accelerated erosion, capture sediment, and provide for groundwater recharge.

According to the PFC data sheet from 6/7/2016, the vegetation at Dry Oak Spring is adequate cover to protect shoreline/soil surface and dissipate energy during high wind and wave events or overland flows. Vegetation is comprised of those plants or plant communities that have root masses capable of withstanding wind events, wave flow events, or overland flows.

b) Vegetation reflecting: Desired Plant Community (DPC), maintenance of riparian and wetland soil moisture characteristics, diverse age structure and composition, high vigor, large woody debris when site potential allows, and providing food, cover, and other habitat needs for dependent animal species.

Riparian vegetation included sedges, rushes, wild rose, tamarisk, foxtail barley, burdock, and squaw bush, which indicates proper composition of riparian-wetland vegetation. Plants exhibited high vigor. Plants exhibited diverse age-class distribution.

c) Re-vegetating point bars; lateral stream movement associated with natural sinuosity; channel width, depth, pool frequency and roughness appropriate to landscape position

This is a lentic site so this is not applicable.

d) Active floodplain

The wetland area is saturated at or near the surface or inundated in relatively frequent events. Water level fluctuation is not excessive. The wetlands are widening. Natural surface or subsurface flow patterns are not altered by disturbance. Upland watersheds are not contributing to riparian-wetland degradation.

3 Desired Species: Desired species, including native, threatened, endangered, and special-status species, are maintained at a level appropriate for the site and species involved.

Indicators of Rangeland Health, monitoring data, and report from Wildlife Biologist were used to make determination:

Indicators of Rangeland Health:

- 12) Functional/structural groups.
- 13) Plant mortality and decadence.
- 15) Annual production.
- 16) Invasive/noxious weeds.
- 17) Reproductive capability of perennial plants.

a) Frequency, diversity, density, age classes, and productivity of desired native species necessary to ensure reproductive capability and survival. (Indicators Used: 12, 13, 15, 16, and 17)

Indicator 12: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Key areas 1 and 4 were rated slightly too moderately changed from what is expected and Key area 2 was rated moderately changed from what is expected. These changes are due to a decrease in the amount of perennial vegetation and the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 3 was rated extremely changed from what is expected due to non-native cheatgrass, halogeton, and Russian thistle dominating the site.

East Pasture:

Key areas 5, 7, and 9 were rated slightly too moderately changed from what is expected and Key areas 6 and 8 have moderately changed from what is expected. These changes are due to a decrease in the amount of perennial vegetation and the episodic increase of the amount of cheatgrass when precipitation conditions are optimum.

Indicator 13: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Key areas 1 and 4 were rated as having moderately more litter than what is expected. Key area 2 was rated as having slightly too moderately more litter than expected. These changes are due to a decrease in the amount of perennial vegetation and the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 3 was rated as having extremely more litter than expected due to non-native cheatgrass, halogeton, and Russian thistle dominating the site.

East Pasture:

Key areas 5, 6, and 9 were rated as having slightly too moderately more litter than expected. Key Area 8 was rated as having moderately more litter than expected. These changes are due to a decrease in the amount of perennial vegetation and the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 7 matched what was expected for the site.

Indicator 15: As documented in the Indicators of Rangeland Health data sheets:

All the key areas with the exception of Key area 3 were rated slightly too moderately less production than expected in 2008. Key area 3 was rated as extremely less production from what is expected due to non-native cheatgrass, halogeton, and Russian thistle dominating the site.

Indicator 16: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Key areas 1, 2, and 4 were rated slightly too moderately changed from what is expected due to the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 3 was rated as extremely changed from what is expected due to non-native cheatgrass, halogeton, and Russian thistle dominating the site.

East Pasture:

Key areas 5, 6, 8, and 9 4 were rated slightly too moderately changed from what is expected due to the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 7 matches what is expected for the site.

Indicator 17: As documented in the Indicators of Rangeland Health data sheets:

All the Key areas with the exception of Key area 3 matched what was expected for the site or rated slightly too moderately reduced reproductive capability. Key area 3 was rated extremely changed from what is expected due to non-native cheatgrass, halogeton, and Russian thistle dominating the site.

b) Habitats connected at a level to enhance species survival.

The habitats on the allotment are connected at a level to allow for spread of native vegetation and survival of key species from site to site.

c) Native species re-occupy habitat niches and voids caused by disturbances unless management objectives call for introduction or maintenance of non-native species. .

(Indicators Used: 12, 13, 16, and 17)

Indicator 12: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Key areas 1 and 4 were rated slightly too moderately changed from what is expected and Key area 2 was rated moderately changed from what is expected. These changes are due to a decrease in the amount of perennial vegetation and the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 3 was rated extremely changed

from what is expected due to non-native cheatgrass, halogeton, and Russian thistle dominating the site.

East Pasture:

Key areas 5, 7, and 9 were rated slightly too moderately changed from what is expected and Key areas 6 and 8 have moderately changed from what is expected. These changes are due to a decrease in the amount of perennial vegetation and the episodic increase of the amount of cheatgrass when precipitation conditions are optimum.

Indicator 13: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Key areas 1 and 4 were rated as having moderately more litter than what is expected. Key area 2 was rated as having slightly too moderately more litter than expected. These changes are due to a decrease in the amount of perennial vegetation and the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 3 was rated as having extremely more litter than expected due to non-native cheatgrass, halogeton, and Russian thistle dominating the site.

East Pasture:

Key areas 5, 6, and 9 were rated as having slightly too moderately more litter than expected. Key Area 8 was rated as having moderately more litter than expected. These changes are due to a decrease in the amount of perennial vegetation and the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 7 matched what was expected for the site.

Indicator 16: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Key areas 1, 2, and 4 were rated slightly too moderately changed from what is expected due to the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 3 was rated as extremely changed from what is expected due to non-native cheatgrass, halogeton, and Russian thistle dominating the site.

East Pasture:

Key areas 5, 6, 8, and 9 4 were rated slightly too moderately changed from what is expected due to the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 7 matches what is expected for the site.

Indicator 17: As documented in the Indicators of Rangeland Health data sheets:

All the Key areas with the exception of Key area 3 matched what was expected for the site or rated slightly too moderately reduced reproductive capability. Key area 3 was rated extremely changed from what is expected due to non-native cheatgrass, halogeton, and Russian thistle dominating the site.

d) Habitats for threatened, endangered, and special-status species managed to provide for recovery and move species toward recovery and move species toward de-listing.

There are no threatened, endangered, and special-status species on the Monument Wash Allotment.

e) Appropriate amount, type, and distribution of vegetation reflecting the presence of (1) the desired plant community (DPC), where identified in a land use plan, conforming to these Standards or (2) where the DPC is not identified, a plant community that equally sustains the desired level of productivity and properly functioning ecological conditions. . (Indicators Used: 12, 13, 16, and 17)

Indicator 12: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Key areas 1 and 4 were rated slightly too moderately changed from what is expected and Key area 2 was rated moderately changed from what is expected. These changes are due to a decrease in the amount of perennial vegetation and the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 3 was rated extremely changed from what is expected due to non-native cheatgrass, halogeton, and Russian thistle dominating the site.

East Pasture:

Key areas 5, 7, and 9 were rated slightly too moderately changed from what is expected and Key areas 6 and 8 have moderately changed from what is expected. These changes are due to a decrease in the amount of perennial vegetation and the episodic increase of the amount of cheatgrass when precipitation conditions are optimum.

Indicator 13: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Key areas 1 and 4 were rated as having moderately more litter than what is expected. Key area 2 was rated as having slightly too moderately more litter than expected. These changes are due to a decrease in the amount of perennial vegetation and the episodic increase of the amount of

cheatgrass when precipitation conditions are optimum. Key area 3 was rated as having extremely more litter than expected due to non-native cheatgrass, halogeton, and Russian thistle dominating the site.

East Pasture:

Key areas 5, 6, and 9 were rated as having slightly too moderately more litter than expected. Key Area 8 was rated as having moderately more litter than expected. These changes are due to a decrease in the amount of perennial vegetation and the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 7 matched what was expected for the site.

Indicator 16: As documented in the Indicators of Rangeland Health data sheets:

West Pasture:

Key areas 1, 2, and 4 were rated slightly too moderately changed from what is expected due to the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 3 was rated as extremely changed from what is expected due to non-native cheatgrass, halogeton, and Russian thistle dominating the site.

East Pasture:

Key areas 5, 6, 8, and 9 4 were rated slightly too moderately changed from what is expected due to the episodic increase of the amount of cheatgrass when precipitation conditions are optimum. Key area 7 matches what is expected for the site.

Indicator 17: As documented in the Indicators of Rangeland Health data sheets:

All the Key areas with the exception of Key area 3 matched what was expected for the site or rated slightly too moderately reduced reproductive capability. Key area 3 was rated extremely changed from what is expected due to non-native cheatgrass, halogeton, and Russian thistle dominating the site.

Trend Data:

Overall the vegetation on Monument Wash Allotment is static to upward trend. Shadscale is in a downward trend in key area 1. Spiny hopsage is in a downward trend in key area 4. Valley Saltbush and budsage are in a downward trend in key area 5. Key area 7 has no plant species in a downward trend.

4 Clean Water: BLM will apply and comply with water quality standards established by the state of Utah (r.317-2) and the federal clean water and safe drinking water acts. activities on BLM lands will fully support the designated beneficial uses described in the

Utah water quality standards (r.317-2) for surface and groundwater. (BLM will continue to coordinate monitoring water quality activities with other federal, state, and technical agencies.)

The Monument Wash Allotment is considered to be in compliance with standard #4. BLM will apply and comply with water quality standards established by the State of Utah and the Federal Clean Water and Safe Drinking Water Acts.

Signature: _____ **Date:** _____

Title: _____

Appendix A Monitoring Study Tables

Frequency:

Key area 1

Species	% Frequency/Year								Trend Rating
	6x6 in		12x12 in		24x12 in		24x24 in		
	2010	2013	2010	2013	2010	2013	2010	2013	
Indian ricegrass	1	2	4	5	4	6	10	12	Static
Jame's galleta	14	23	26	36	38	46	52	58	Up
Shadescale	24	16	32	24	41	32	57	46	Down
Pricklypear cactus	2	2	2	2	2	2	2	3	Static
Rabbitbrush	0	1	0	1	1	2	2	7	Up
Winterfat	0	0	0	1	0	1	2	2	Static
Sand dropseed	0.5	4.5	0.5	3	0	2	0	1	Up
Desert globemallow	0	4	0	2	0	2	0	0	Up

Key area 4

Species	% Frequency/Year								Trend Rating
	6x6 in		12x12 in		24x12 in		24x24 in		
	2010	2013	2010	2013	2010	2013	2010	2013	
Indian ricegrass	1	2	4	2	4	2	11	10	Static
Jame's galleta	16	20	32	37	44	46	56	56	Up
Fourwing Saltbush	0	0	2	1	3	2	4	4	Static
Spiney hopsage	7	6	8	8	12	9	16	12	Down
Pricklypear cactus	2	2	7	6	11	10	13	13	Static
Sand dropseed	2	2	8	6	10	7	12	9	Static
Desert globemallow	0	8.5	0	4.5	0	2	0	1	Up

Key area 5

Species	% Frequency/Year								Trend Rating
	6x6 in		12x12 in		24x12 in		24x24 in		
	2010	2013	2010	2013	2010	2013	2010	2013	
Jame's galleta	18	16	30	33	40	39	52	52	Up
Mat saltbush	16	18	22	22	29	28	36	36	Static
Valley saltbush	11	10	20	16	26	22	32	31	Down
Budsage	3	2	6	4	8	7	15	12	Down
Desert globemallow	0	0	0	2	0	2	0	4	Up

Key area 7 Outside

Species	% Frequency/Year								Trend Rating
	6x6 in		12x12 in		24x12 in		24x24 in		
	2010	2013	2010	2013	2010	2013	2010	2013	
Indian ricegrass	0	0	2	0	4	3	6	4	Static
Jame's galleta	16	20	36	37	54	56	68	70	Static
Mat saltbush	4	4	6	5	8	6	11	10	Static
Valley saltbush	12	8	16	16	23	22	33	30	Static
Pricklypear cactus	1	0	2	2	2	2	4	4	Static
Winterfat	2	1	3	4	6	7	10	13	Static
Sandberg bluegrass	0	0	0	0	0	0	1	2	Static
Budsage	2	0	3	2	5	2	7	4	Static
Horsebrush	0	0	2	2	2	2	2	2	Static

Line Point Intercept:

Key area 1

Species	% Cover by Year		
	*2008	2010	2013
Bare Ground	18.00	53.50	57.63
Duff	41.00	6.63	0.50
Embedded Litter	4.00	11.00	2.50
Other Litter	0.00	0.00	13.38
Woody Litter >5mm	2.00	2.13	1.13
Biological Soil Crust	6.00	2.50	1.00
Rock >5mm	14.00	2.75	5.00
Indian ricegrass	6.00	0.38	0.75
Jame's galleta	9.00	6.00	7.25
Shadescale	11.00	14.25	6.76
Pricklypear cactus	1.00	0.00	0.00
Winterfat	1.00	0.13	0.13
Tansyaster	3.00	0.00	0.00
Cheatgrass	41.00	0.38	1.26
Halogeton	0.00	0.00	0.75

Key area 4

Species	% Cover by Year		
	*2008	2010	2013
Bare Ground	21.00	44.88	42.5
Duff	47.00		
Embedded Litter	3.00	21.13	1.25
Other Litter	6.00	0.13	15.25
Woody Litter >5mm	1.00	2.25	2.63
Biological Soil Crust	1.00	0.50	0.13
Indian ricegrass	0.00	1.63	1.13
Jame's galleta	7.00	7.66	9.38
Fourwing saltbush	0.00	0.75	0.76
Spiney hopsage	6.00	2.88	3.13
Pricklypear cactus	3.00	0.79	1.63
Desert globemallow	1.00	0.13	0
Sand dropseed	0.00	1.50	1.88
Broom snakeweed	4.00	0	0.13
Cheatgrass	54.00	0	12.88
Russian thistle	1.00	15.63	6.88

Key area 7 Outside

Species	% Cover by Year		
	*2008	2010	2013
Bare Ground	45.00	57.00	67.63
Embedded Litter	0.00	12.88	0.38
Duff	12.00	*	*
Other Litter	3.00	0.00	14.88
Woody Litter >5mm	1.00	1.00	0.13
Biological Soil Crust	19.00	7.13	0.13
Rock >5mm	4.00	1.13	3.75
Indian ricegrass	0.00	0.13	0.13
Jame's galleta	8.00	7.01	4.01
Mat saltbush	3.00	1.26	1.00
Valley saltbush		4.88	3.25
Pricklypear cactus	0.00	0.38	0.26
Winterfat	0.00	0.75	0.50
Budsage	0.00	0.38	0.25
Grand buchwheat	5.00	3.00	1.63
Desert globemallow	0.00	0.50	0.25
Horsebrush	0.00	0.25	0.38
Annual wheatgrass	0.00	0.13	0.25
Cheatgrass	9.00	1.13	0.13
Halogeton	0.00	0.38	0.00

Key area 5

Species	% Cover by Year		
	*2008	2010	2013
Bare Ground	33.00	54.88	67.50
Duff	13.00	0.38	0.25
Embedded Litter	0.00	10.63	0.00
Other Litter	13.00	0.00	4.38
Woody Litter >5mm	0.00	1.25	0.63
Biological Soil Crust	14.00	7.51	2.88
Rock >5mm	10.00	0.25	0.00
Indian ricegrass	0.00	0.13	0.00
Jame's galleta	1.00	5.66	5.88
Mat Saltbush	14.00	9.38	7.88
Valley Saltbush		6.25	6.74
Budsage	0.00	1.00	1.00
Desert globemallow	0.00	0.75	0.13
Cheatgrass	21.00	0.00	1.38
Halogeton	0.00	0.50	0.50

****Key area 2**

Species	% Cover by Year	
	*2008	2010
Bare Ground	24.00	53.38
Embedded Litter	0.00	15.50
Duff	33.00	0.13
Other Litter	11.00	0.00

****Key area 9**

Species	% Cover by Year	
	*2008	2010
Bare Ground	11.00	40.00
Embedded Litter	0.00	18.75
Duff	57.00	0.63
Other Litter	2.00	0.00

Woody Litter >5mm	2.00	0.88
Biological Soil Crust	6.00	5.13
Rock >5mm	6.00	0.00
Indian ricegrass	0.00	0.13
Jame's galleta	2.00	2.00
Mat saltbush (ATCO4)	2.00	1.00
Valley saltbush	4.00	4.25
Budsage	0.00	0.75
Grand buchweat	2.00	0.75
Desert globemallow	0.00	0.13
Halogeton	0.00	4.00
Cheatgrass	37.00	0.25
Plantain	3.00	0.00

Woody Litter >5mm	1.00	2.13
Biological Soil Crust	0.00	0.13
Rock >5mm	2.00	6.50
Indian ricegrass	0.00	0.38
Jame's galleta	7.00	7.13
Shadescale	0.00	3.25
Winterfat	1.00	2.63
Desert globemallow	1.00	2.50
Russian Thistle	0.00	0.50
Cheatgrass	61.00	2.75
Halogeton	8.00	7.63

****Key area 8**

Species	% Cover by Year	
	*2008	2010
Bare Ground	25.00	43.63
Embedded Litter	1.00	24.13
Duff	25.00	0.25
Other Litter	19.00	0.00
Woody Litter >5mm	0.00	0.75
Biological Soil Crust	2.00	0.79
Rock >5mm	7.00	4.38
Indian ricegrass	2.00	0.13
Jame's galleta	20.00	8.25
Shadescale	5.00	4.00
Sand Dropseed	0.00	1.25
Pricklypear cactus	1.00	0.13
Winterfat	0.00	0.50
Desert globemallow	0.00	0.25
Russian Thistle	0.00	0.63
Cheatgrass	22.00	3.38
Halogeton	0.00	4.38

****Key area 6**

Species	% Cover by Year	
	*2008	2010
Bare Ground	39.00	66.25
Embedded Litter	0.00	10.38
Duff	29.00	0.00
Other Litter	9.00	0.00
Woody Litter >5mm	0.00	1.13
Rock >5mm	2.00	2.75
Indian ricegrass	2.00	0.13
Jame's galleta	3.00	0.25
Mat saltbush	5.00	4.25
Valley saltbush	9.00	3.63
Annual wheatgrass	0.00	3.88
Cheatgrass	0.00	2.25

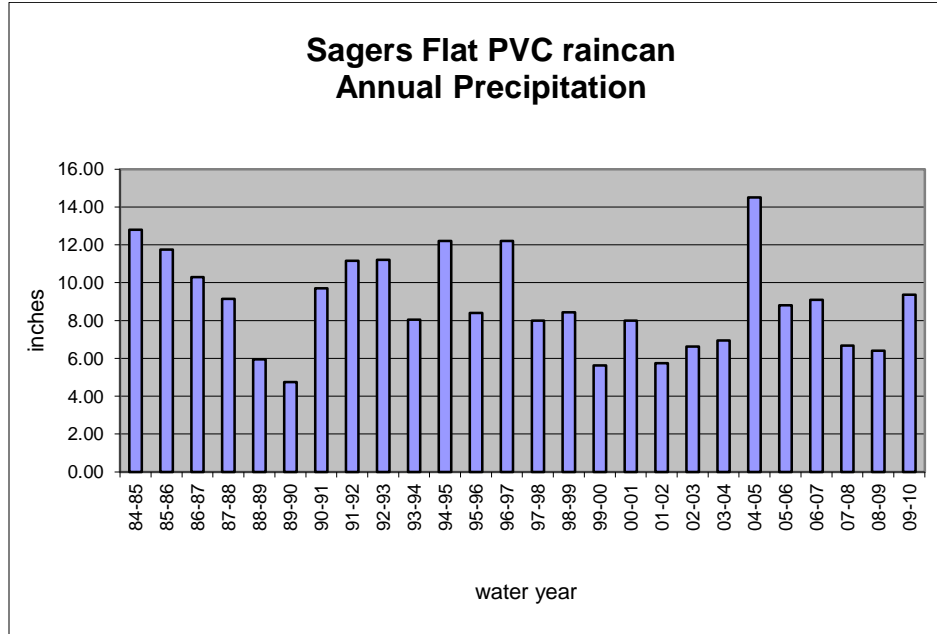
****Key area 3**

Species	% Cover by Year	
	*2008	2010
Bare Ground	25.00	44.00
Embedded Litter	0.00	8.00
Duff	53.00	4.00
Woody Litter >5mm	0.00	0.63
Biological Soil Crust	11.00	0.13
Rock >5mm	0.00	0.13
Plantain	1.00	0.00
Cheatgrass	40.00	2.00
Halogeton	1.00	15.50
Russian Thistle	15.00	19.75

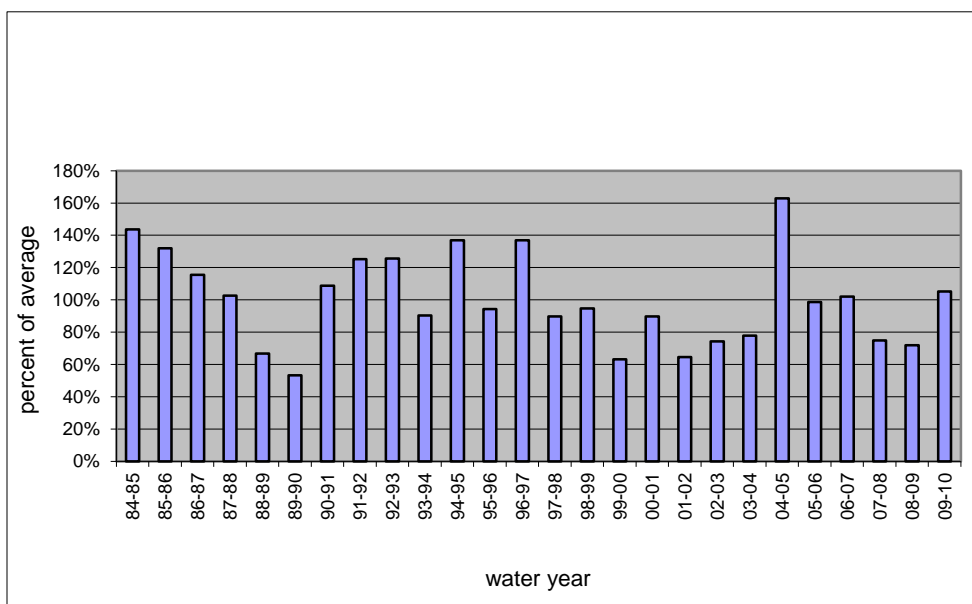
* The line point intercept data was collected by running two 50 foot transects for a total of 100 cover points. In 2010 and 2013 the line point intercept data was collected using the Draft Utah Monitoring Manual protocol which, collects 800 points of cover data.

** Data at these Key areas was utilized for rangeland health evaluation but not long term trend.

Precipitation:



Average rainfall is 8.9 inches



Appendix E

Actual Use

Year	Actual Use	% Preference (5124 AUMs)
1987-88	1628	32
1988-89	2320	45
1989-90	3566	70
1990-91	2449	48
1991-92	1355	26
1992-93	2306	45
1993-94	3275	64
1994-95	2901	57
1995-96	3506	68
1996-97	3260	64
1997-98	3758	73
1998-99	4695	92
1999-00	4466	87
2000-01	2934	57
2001-02	2553	50
2002-03	692	14
2003-04	1836	36
2004-05	2432	47
2005-06*	3506	68
2006-07*	2798	54
2007-08*	3482	68
2008-09*	3777	74
2009-10	3622	71
2010-11	5692	111
2011-12*	1366	27
2012-13	1087	21
2014-15*	2083	41